NEW ENGLAND FARMER

DEVOTED TO AGRICULTURE, HORTICULTURE, AND KINDRED ARTS.

NEW SERIES. **Boston, July, 1867.** VOL. I.---NO. 7.

R. P. EATON & CO., PUBLISHERS, OFFICE, 34 MERCHANTS' ROW. **MONTHLY.** SIMON BROWN, S. FLETCHER, } EDITORS.

JULY.---THE HAY MONTH.

"I am a true laborer. I earn that I eat, get that I wear, owe no man hate, envy no man's happiness, glad with every man's good, and content with my own farm."—*Shakspeare.*

ET us earnestly strive to use the above language in sincerity, and we shall find each succeeding JULY a happier month than any of its predecessors.

What a month of fruition the abundant spring rains and vivifying suns of June have made it. How the farm has *filled up*—what a fullness there is all about the homestead. The fences are half hidden in the spires of the ripening red-top, the heads of herdsgrass and sweet blossoms of the red clover. You had a near neighbor a month ago, but now his dwelling is out of sight. Honeysuckles of varied hues and odors twine around the pillars of the piazza, or kindly climb over the lattice of the old porch to shut out the noonday sun. The world don't look half as large as it did a month ago, but a great deal more crowded.

How appropriately are all things ordered to aid us in our labors! The heat is now greatly increased, just at the moment when we are engaged in the great HAY HARVEST,—and the showers that are usually so plentiful in June are in a measure held back, so that the farmer is able to cut the grass and rapidly prepare it for storing away in the barn.

But nature is still lavish in her bounties. The grass fields are shorn of their beauty, it is true, soon, however, to be clothed anew in "living green." While they are recuperating, other plants are coming into vigorous maturity. Besides the flowers of last month, there are now the candytuft, the catch-fly, columbines, egg-plants, marigold, marvel of Peru, roses and lilies. So the woods and groves produce new flowers, and the roadsides are ornamented with the blue bell and other gay blossoms to gladden the traveller's eye and heart.

Before the month closes, the rye will be yellow and ready for the sickle. The "oats will whiten apace, and quiver, each individual grain on its light stem, as they hang like rain-drops in the air." The wheat and barley assume a dull green, while their swelling ears bow before every breeze that blows over them.

HAYING, now, is the work which calls for most of the farmer's time. Indeed, on many farms it commences in June. Many pieces of clover are ready for the scythe during the last week in June, and deteriorate essentially if not cut. But *hoeing* ought not to be neglected. It is better to suspend haying for a day or two to hoe the growing crops, than to allow weeds to take possession of the ground. It

requires but little labor, comparatively, to go over a field that was well plowed and harrowed, and where weeds and grass have not been allowed to spring up,—but where this work was slighted, and weeds have been allowed to take root, the labor of hoeing is slow, tedious and expensive, and the soil is robbed of a considerable portion of the nutriment that ought to have sustained the prime crop.

Harvesting the Small Grains. Do this before the grain is fully ripe. See article on another page of this number, on this subject.

CELERY. Set celery plants. Cover them with boards for a week to keep the sun off, and water freely.

CABBAGE. Set cabbage plants in every nook and corner for a late crop. They are excellent for the stock, and excellent for bipeds all through the winter, as "cold slaw."

It will not be too late to put in melons, and cucumbers for pickles early in this month. Wherever early crops have been taken off put in ruta bagas, and later in the month the flat turnip.

It will not be difficult to get *two* crops on a considerable portion of the ground occupied, and where such is the case, the profit will be more than doubled. The market gardeners get *four* crops,—spinach, peas, potatoes and cabbage. The peas are sowed the moment the spinach is off, then potatoes are planted between the rows of peas, and are fairly established by the time the peas fail. The pea vines are then cleared off and cabbage plants set in their place.

JULY will be a busy month to every good farmer,—but if he takes its work with some system, and does not attempt too much, he will find the work of haying interesting, and the month one of calm and rational enjoyment.

FRUIT PRESERVING HOUSE.

While sipping his wine one day with some philosophic friends, Dr. Franklin noticed that a fly which he had taken from his wine as he poured it out, and thrown carelessly upon the table, supposing it to be dead, was showing signs of life. Now as the life of a fly can be preserved during a "bottled-up" imprisonment of several years in a cold wine cellar; as other animals survive the stupor of hibernation, the Doctor and his friends began to philosophize on the probability of the discovery of some scientific means by which human life may in like manner be held in suspense for fifty or a hundred years. The Doctor suggested that it would be pleasant to take a nap of a century or so, and then be permitted to open one's eyes on the changes which might occur in the world during that length of time. We were reminded of this little incident in the Doctor's history by what we saw and heard at the formal opening, May 20th, of a building in Cambridge, recently erected by the Massachusetts Fruit Preserving Company. Science may be compelled to stop short of the Doctor's hopes, but it is certainly doing great things in the way of preserving fruits, vegetables, fresh meats, fish, &c. After examining the building and testing the preserved fruits, the president of the company, Dr. Geo. B. Loring, explained the principle on which the house is built,—being that perfected by Prof. Nyce of Cleveland, Ohio. The building is two stories high. The walls are some three feet thick, formed on the inside and outside with sheets of galvanized iron, and between them a packing of wood shavings. The second story is the ice room, separated from the fruit room by a floor of galvanized iron, made water tight, and so inclined as to allow the water from the ice to run off. The floor of the fruit room is also of galvanized iron, with shavings, &c., below, to prevent the entrance of moisture. Some patentable matter is spread upon the floor to absorb moisture and to affect the air. The object of the house is to secure uniform and proper coldness, dryness, purity, absence of light, and, if possible, the great agent of decomposition, the oxygen of the air.

Dr. Loring spoke with much confidence of the success of the new method, regarding it as of great value, not only for the preservation of domestic fruits, but of foreign fruits; and remarked that the construction of these houses would render the business of dealing in the latter, now so hazardous, quite safe and remunerative. Eggs, vegetables, and other products of the farm could be preserved with equal facility; and he had no doubt that by building these houses on a smaller scale, the use of cellars would be superseded to a great extent. The advantage of this would be that the fruit would not only be preserved for a much longer period, but would be kept in

much better condition, and thus the health of the community would be promoted.

One great objection to some fruit preservers has been the rapid decay of fruit on being exposed to the air. Mr. C. F. Hovey exhibited a collection of Hubbardston apples, taken from Mr. Converse's fruit house in Malden, six weeks ago, and since kept in a common cellar, as an evidence that the cold and dry atmosphere of the fruit houses, so thoroughly suspends decay that fruit will keep for a long time after being taken out of them.

We understand that the company propose to rent the building to farmers and market men who deal in fruits, berries, vegetables, fresh meats, fish, &c.

ILLINOIS INDUSTRIAL UNIVERSITY.

The Board of Trustees had a two days and a half session, at Champaign, commencing May 7. From a report of its doings in the *Prairie Farmer*, we learn that the Regent, Dr. J. M. Gregory, made a report on the organization, course of study, &c., which occupied over two hours in reading! It favors manual labor, which the writer of the report in the *Farmer* appears to disapprove; it is silent as to the admission of females, but as the law makes no distinction, it is thought they may be admitted as well as males; it provides for instruction in nearly all branches except law, medicine and theology; for a regular course of three years, and for instruction in optional studies. The students are to wear a prescribed uniform and be subject to a regular military drill. The Board ordered the sale of 180,000 acres of the land script at not less than 50c per acre; leaving 200,000 on hand. Improvements and alterations in the buildings and grounds to the amount of $7000 were ordered. The school is to be formally opened on the first Monday of March, 1868, but it is hoped that accommodations for some of the classes will be provided by the first of October ensuing. Executive and other committees were appointed, and the institution seems to be fairly under way.

RINGING TREES.—Mr. Joseph Davis, of Baldwinsville, Mass., writes to us that the trees which were made productive by this process, have been planted about thirty years, and although still thrifty and growing, never produced more than one peck of apples, and those so knurly and shriveled that he could not tell what kind they were, until he girdled them. After waiting thirty years for them to bear fruit, Mr. Davis agrees with Mr. Baker that, under the circumstances, the experiment was not only "allowable" but entirely justificable.

COLIC IN HORSES.

We are informed by a gentleman who has given much attention to the diseases to which horses are liable, that the following remedy is a safe and effective one. It is certainly simple, and if administered with proper prudence, we are not aware that it would do any harm to the animal, if it did not effect a cure. We give it the more readily because it is a remedy always at hand, namely:—

Dissolve as much *salt* in a quart of pure water as may be required thoroughly to saturate the liquid, and drench the patient with one half of it. If symptoms of relief are not noticed in fifteen minutes or half an hour, give the remainder. He states that this remedy has proved entirely successful in very severe cases, where other more complicated medicines had failed.

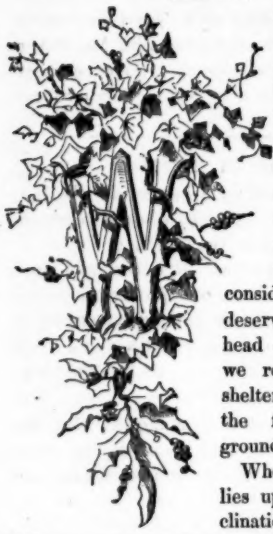
There are two kinds of colic, *flatulent colic*, and *spasmodic colic*. In the first, it is occasioned by the enlargement of the intestines by the food passing through the process of *fermentation*, instead of digestion. Gases are largely generated, and hence the distention and pain.

The *spasmodic colic*, which is accompanied by more excruciating pains than the former, is caused by a contraction of a portion of the small intestines. In either case, to force down various pungent and violent remedies is dangerous and cruel!

BLACK KNOT.—B. D. Walsh, Editor of the *Practical Entomologist*, in stating that black knot is nothing but an assemblage of minute funguses, says that the kind that infest the plum is a distinct species from that found on the cherry, and he cites several instances in proof, where trees of the plum were full of the knot, while cherry trees standing within a short distance were wholly unaffected, although the spores were liable to be blown in profusion from one tree to another. He also states that the black knot on the chokecherry and wild black cherry differs in species from the knot which attacks the cultivated cherry. —*Country Gentleman.*

FARMERS' GARDENS---No. V.

Shelter.



HERE it is desirable to raise early vegetables and the finer fruits, this is an important matter in most of the Northern States, and one that does not receive the consideration that it deserves. Under the head of "*Location*," we referred to the shelter afforded by the form of the ground.

Where a garden lies upon a gentle inclination to the South, if the ground above is occupied by an orchard or by forest trees, and especially by evergreens, little other shelter is needed. But such situations cannot always be obtained. Where the garden is upon level grounds, fences of boards, or stone walls are the shelter more commonly resorted to. But there are objections to cutting up the grounds around the home into small enclosures. It detracts much from their beauty, and the constant opening and shutting of gates and bars is attended with much inconvenience.

Belts of white pine, arbor vitæ, or Norway Spruce planted in double or triple rows on the northerly and easterly side of gardens, furnish a better protection, and at the same time add much more to the beauty of the ground. Where it is desired to raise *early* vegetables or the finer fruits, some such shelter is absolutely necessary. Vines and the more delicate pears are often greatly injured and even ruined by rain storms, accompanied by northeast winds. A fence five or six feet high, or an evergreen hedge, will generally save them Under such a shelter, beds for early vegetables may be arranged, and next to them the more tender varieties of pears may be planted. In such situations, the ground will not freeze as deeply in the winter, and will be in a condition to be worked several days earlier than in open ground.

In such sheltered situations the climate is greatly modified, and is actually found to be several degrees warmer on cold and windy days than in unsheltered places.

One of the most remarkable instances of amelioration of climate produced by artificial shelter is found in the garden of Mr. Tudor of Nahant. This is a rocky promontory projecting from the coast of Lynn and Massachusetts Bay. It consists chiefly of ledges, or rock piled upon rock; is not more than half a mile wide, and is exposed to the full sweep of the easterly winds, which bring the salt spray over the surface. The soil is thin, and with such fierce visitations of wind and salt water, the vegetation is meagre and only of the coarsest kind. Yet, in such a situation, science and labor have triumphed over the natural obstacles, and made the almost barren rocks to blossom as the rose! Corn, and waving grain, trees of various climes, fruits, flowers, shrubbery and rich lawns now meet the eye, where only desolation held sway but a few years before.

Mr. Tudor found that trees, even those of a hardy character, would not grow, or scarcely live, swept and twisted by the winds, and coated by the salt spray, and he set himself to protect them. The first step was to ameliorate the climate. Cold winds, surcharged with acrid salts must be kept out, while soft suns and gentle airs must be admitted to the plants, and he has so far changed the climate of the locality, as to enable him to rear tender plants, and to produce fruits scarcely attainable in sheltered spots in the interior. Around one garden he erected fences from ten to fifteen feet high of common lathes, nailed to strong cross pieces, leaving interstices about two inches wide between them. Around another garden the fence is of brick; the lower five or six feet is close, and the upper portion full of holes about two inches square. These fences so break and sift the winds as to deprive them of all power of either straining the trees, or conveying the salt spray to their foliage. At the same time the temperature is so changed, that several degrees of difference may be noticed between the inside and outside of the enclosure. In a cold day, there is a genial, soft atmosphere in the garden, while out of it, November winds may howl along the coast with icy breath. Under this change of temperature,

Mr. Tudor has succeeded in clothing this part of the promontory with rich varieties of plants. We saw pear trees only transplanted four years, loaded with fruit. The Northern Spy fruited in perfection. There were tender raspberries, and nearly all the fruits found in our gardens.

Mr. Tudor has set 10,000 trees among the rocks on the handful of earth he could come at, where he desired to plant, so that now the currents of wind being broken, and evaporation in a measure retarded, vegetation will spring into life spontaneously, and trees of a less hardy character than those commenced with, will succeed. His example is widely felt, and other cultivators take the hint from his operations, and by means of fences and shubbery are enabled to rear plants which it would be otherwise impossible to do.

On Cape Ann,—another promontory still farther North than Nahant,—is a granite wall fifteen feet high, erected by the owner of a quarry, for the purpose of protecting his garden from the east wind.

The market gardeners in Belmont, West Cambridge, and other towns in the vicinity of Boston, erect light board fences on the northerly and easterly sides of their grounds, and against them arrange long rows of hot beds, covered with glass, and in addition straw matting during the night. Here, with the assistance of horse manure from the city stables, they raise lettuce, radishes, early cabbages, turnips, beets, cucumbers and tomatoes, and large quantities of similar plants, which, at the proper season, are either transplanted into their own fields, or sold to gentlemen in the vicinity. Indeed, quite a profitable trade has recently sprung up between these gardeners and the people from the country, who resort to them for early plants to be transplanted into their own gardens.

The proof of the benefit of shelter to the garden in our climate, meets one on every hand. There are few good grapes that ripen in New England on unprotected grounds, but sheltered by a wall or hedge, many fine grapes will attain perfection. One of the finest nurseries within our knowledge is protected by a thick belt of forest trees, and here the finest pears yield their fruit in perfection, which will rarely pay for cultivation in unsheltered localities. For the early maturity of fruits, so that they may escape the autumnal frosts, high culture and heavy manuring cannot take the place of shelter. These, in the culture of grapes and pears, will produce a luxuriant growth of wood, and large, plump fruit, but the wood is so filled with sap, that the maturing of the fruit is rather retarded than hastened by it. For this purpose, the atmosphere needs to be *cultivated* rather than the soil, and this can only be effected by shelter, which protects the fruits from the searching winds, and surrounds them with a warmer and more uniform temperature.

We formérly attempted to produce early maturity by high culture, but experience has proved its futility. This will give us fine fruits where the season is long enough, but will not insure their early maturity, which is the great desideratum in the northern States, especially with respect to those fruits and plants that have been brought to us from regions where the climate is warmer and the seasons are longer.

For the New England Farmer.

NOXIOUS ANIMALS, INCLUDING INSECTS.---NO. IV.

Cut Worms.

We resume our notice of noxious insects with some remarks concerning cut worms, the *Agrotididæ* of entomologists. Of these, according to Walsh, there are two genera, *Agrotis* and *Hadena*. Those which are commonly known as Cut Worms by the farmers and gardeners of New England, are the larvæ of a few species of the genus *Agrotis*, similar in appearance and habits, described by Harris as "thick, greasy-looking caterpillars, from 1¼ inches to 2 inches in length, when fully grown, of a dark, ashen-gray color, with a brown head, a blackish horny spot on the top of the first and last rings, a pale stripe along the back, and several minute black dots on each ring."

Dr. Melsheimer, of Pennsylvania, calls the chief culprit of this genus, the "corn cut worm, varying in color from a pale ash to a deep or obscure brown." They take their qualifying name—"cut"—from their manner of attacking vegetation. Lying concealed during the day, at a small depth in the soil, they come out in the night, and *cut* off, near the surface of the ground, whatever young and tender plant they may chance to reach, sometimes dragging the amputated part down to and over their retreat, that they may feed on the same during the day.

I know of no young plant, red pepper not excepted, either of the field or garden, that is not sometimes attacked by these indiscriminate devourers; though they seem to prefer

cabbages, young corn, and beans. They are hatched and grow to a length of from three-eighths to three-fourths of an inch by autumn, yet, feeding chiefly on grass and small weeds, their injuries are then too trifling to be noticed. But from the 20th of May, to the 10th of July, of the following year, just when the crops of the field and garden are in their infancy and tender age, the mischief perpetrated by these larvæ is often very serious. We are told that the perfected insects or moths from these caterpillars, are those ashen colored, nocturnal millers, so called, that make such Quixotic attacks on the lamps and candles during summer evenings.

There is another naked ground caterpillar, that, perhaps from the want of more thorough examination, I have not yet identified with any of the descriptions of entomologists. It is somewhat thicker and longer than the brown cut worm, of a shining and slightly translucent appearance, of a smoky color, shaded with brown and green, and has a copper colored head. Unlike the brown cut worm, he cuts the young corn below the surface of the ground, and just above the lateral roots. He matures as a larvæ, in July, a little later than the brown worm. Life and health being granted, I intend to procure some moths from these copper-heads next summer, and send them to head-quarters for trial and a name. Their ravages are mostly noticed in the corn-field, and are more fatal to the corn than those of the brown worm.

And now, behold, our fields and gardens are occupied by an army of amputators, with instruments in hand, whose sole employment and pleasure is to lay waste and destroy; and nothing prevents the completing of the destruction which they yearly initiate, except the want of numbers. And it is certainly pertinent to inquire for what purpose they are commissioned and sent among us. Certainly not to utterly destroy the vegetation on which they subsist; for in that case they must themselves perish. And certainly, not to prevent, as a general rule, the maturing of ample crops in field and garden; for if so, they have failed in their mission. It seems probable that their *normal condition*, as to numbers, is just sufficient to cut off and suppress only the redundancy of plants. But when they proceed to amputate whole fields of corn, cabbage, and beans, we have a right to presume that they have gone beyond their instructions and should be punished.

When we consider the extraordinary fecundity of this class of animals,—each female moth laying from two hundred to five hundred eggs, it is more wonderful that they are kept so near their normal number, than that they occasionally greatly exceed it. Taking the lowest number of eggs,—two hundred to each pair of moths,—to keep the number uniform, from year to year, ninety-nine out of each one hundred must fail to produce a perfect insect, and one only must succeed. The agencies commissioned to suppress the ninety-nine have never yet exceeded their instructions to the amount of one ninety-ninth part of the work assigned them; and do not often fall short of fulfilling the same to an equal degree of accuracy. This is more than can be said of some of our modern generals.

I. B. HARTWELL.

Wilkinsonville, Mass., 1867.

For the New England Farmer.

NOXIOUS ANIMALS, INCLUDING INSECTS.---NO. V.

Cut Worms.

Perhaps if we could get some glimpses of the probable utility of these *Agrotidians* under consideration, we might be more willing to endure them under proper limits.

In nature's plan there is no less redundancy of young plants than of young animals; for nature sows liberally, and so should the farmer —expecting that the redundancies will be suppressed. Our insect assists in this work, and at the same time furnishes from his own redundance, subsistence for other animals. Also he mines the soil twice a year—first to hibernate, and secondly to pass through his transformations; thus promoting aeration of the soil, and finally adding to its fertility by contributing his remains.

The agencies by which these insects are kept in check are numerous, and many of them unknown as yet. The most obvious are the birds and toads. The red wing blackbird and cognate species, several varieties of sparrows, though accounted granivorous, and the thrushes generally, forage on the ground, and devour, with other larvæ, many cut worms. Many of these birds seem to hunt rather leisurely and carelessly, seldom stopping to listen for their prey, or to dig into their subterranean retreats. But the common robin is a model hunter. From early dawn to evening twilight he is on the cultivated fields and gardens of his friends, (for he knows and shuns the place where the boys shoot robins and steal their eggs,) hunting for worms, as soon in the season and as late as cut-worms can be found. In hunting, he moves forward a few paces at a brisk hop, and then stops a few seconds to look and to listen; and such is the acuteness of his hearing, that if a worm moves in the ground near him, it is soon dispatched. Both male and female robins engage in this work, Mrs. Robin being the most industrious. Several pairs are sometimes seen on the same field, each taking a different portion of the hunting ground. Our robins, from kind treatment, have become quite tame, approaching so near that when hoeing in the field, I have repeatedly and distinctly witnessed all that is here affirmed in reference to their habits. They have one weakness,—the like of which is incident to the parental affection in some of

their superiors,—that of feeding their full grown children for some weeks after they have left the nest; working hard themselves to support their offspring, as young ladies and gentlemen of leisure.

It has been estimated on reliable data, that a brood of five young robins and their two parents consume on an average 200 larvæ daily. Add to this the number taken by other birds, and the unknown quantity captured by the nocturnal toads, and we can appreciate some of the agencies that keep these marauders under restraint. Yet there are other agencies, not well understood, which occasionally are more efficacious than those enumerated. In 1862 the amount of cut-worms with us, was at least six times its usual number; while in 1861 and 1863 the number was about an average one. Yet during these years there was no corresponding diminution and increase of insectiverous birds or toads. An unusual redundancy of tent caterpillars, canker worms, field mice, &c., is occasionally followed by an unusual scarcity, from causes unknown.

Perhaps it is expected that some methods will be suggested by which the ravages of these insects may be prevented. Most certainly; and the reader shall have the benefit of what little I know in this direction. First, then, take and pay for the NEW ENGLAND FARMER, a paper too well known and appreciated to need a word of encomium; The *American Naturalist*, Salem, Mass., at $3 per year, or the *Practical Entomologist*, published monthly at Philadelphia, at 50 cents a year. Next, encourage and cherish the toads and birds, especially the robins, and not excepting the crows, taking care to tar the seed corn, according to frequent directions given in the FARMER. Then drive away all the boys that shoot and rob the birds, and thin out the cats. Protect some of the cabbage plants with hollow cylinders or prisms, four or five inches high, made of paper, bark, or thin wood. For these ravagers travel in the night from plant to plant; not under ground, but on its surface, and will not scale a perpendicular wall, a few inches high. Last and best of all, go into the cultivated fields and help the robins dig the transgressors out from their shallow retreat, generally immediately under a dilapidated plant, and destroy them or collect them in a dish and commit them to the love and good will of the poultry.

Salt and salt marsh mud is recommended as a disperser of these and other field vermin. I know that strong brine, liberally applied to the laying boxes, roosts and walls of the henhouse will effectually banish hen vermin; and I know that very weak brine applied to squashes, cucumbers, &c., will kill the vines.

For the protection of corn from grubs and other larvæ, the following remedy has been given: a tablespoonful of salt and plaster, one part of the former and three parts of the latter, applied around the corn, not too near, as soon as it is up. Many intelligent farmers use a similar mixture as a fertilizer; but it is doubtful whether so small a quantity of salt will kill the larvæ.

I. B. HARTWELL.

Wilkinsonville, Mass., 1867.

QUANTITY OF SEED PER ACRE.

There is a great diversity of opinion in this country in relation to the quantity of seed requisite to stock an acre, and we find, oftentimes, that the want of a regular and recognized rule in this particular, is the source of serious failures, and loss of both time and cash.

The usual quantities of the several kinds of seed accorded to the acre in New England is, so far as we are acquainted with general usage, as follows:—

Wheat	1½ bushels.
Rye	1½ "
Peas	2 "
Barley	1½ to 2 "
Oats	2 to 3 "
Buckwheat	3 to 4 pecks.
Clover seed, (red)	10 pounds.
Indian corn	6 quarts.

In the "*Farmer's Dictionary*," there is a table in which the quantity of seed usually allowed to the acre by the farmers of Great Britain, is set down as follows:—

Wheat	2½	to 3½	bushels.
Oats	4	to 6	"
Barley	3	to 4	"
Rye	2½	to 3½	"
Peas	3½	to 4½	"
Buckwheat	2	to 2½	"
Clover, (red)	12	to 16	pounds.
Clover, (white)	2	to 4	"
Trefoil	2		"
Rye grass, here called "Witch grass," and never sowed	2		"
Turnips	2	to 3	"

From four to six bushels of oats, and from three and a half to four and a half bushels of peas, would be considered rather a large allowance here. We apprehend there is a mistake in the figures, though we find that in cultivating the flax plant, the most experienced growers in Great Britain, and particularly in Ireland, where the best flax probably in the world is produced, never sow less than six bushels to the acre.

In this country, from half a bushel to three pecks, and sometimes four of buckwheat, and from two to two and a half of peas, are deemed an ample allowance, even on the richest lands. We may, perhaps, account for the superior quantity of seed allowed by the English by the well known superiority of their preparatory labors, and their highly systematic modes of cultivation.

CULTIVATION OF HOPS.

In the old adage that "all's well that ends well" there is a truth of most frequent application in all the affairs of men, but in few, perhaps, more strikingly illustrated than in the business of hop-growing. The soil of the yard may be worked and enriched by the most careful and lavish hand; no pains may be spared in procuring the best roots and poles, nor in planting and setting them; the vines may be most carefully trained, the soil most carefully cultivated, and the depredations of insects most assiduously guarded against, and yet from want of care or skill in harvesting and preparing the crop for market, the whole enterprise may prove a failure. In an article written by William Blanchard, and printed in the old NEW ENGLAND FARMER for 1834, we find the remark that "hops always grow first sort; second sort and refuse hops are made so by unskilful management in picking and drying." But notwithstanding this caution, the hops grown in New England declined so much in character, as to cause great complaints by the purchasers in New York and Philadelphia, in which cities most of our hops were sold. In 1842, on the appointment of Benj. Farnsworth, inspector of hops in Massachusetts, the brewers of Philadelphia and of New York addressed a comunication to him, urging a more careful inspection on his part, and also appealing to the growers for a reform in their habits of picking and curing. They said that hops were annually shipped from Boston and other eastern ports, as first sort, and purchased by the consumer at the highest prices, which, upon examination, were found to contain such large quantities of leaves and stems as to render them unfit for use. We are not informed as to Mr. Farnsworth's success in reforming the abuses complained of, and allude to the subject for the simple purpose of enforcing the importance of carefully observing the following directions, which we condense mainly from Mr. Judd's Hop Culture, for

Picking and Curing.

The time for picking hops is determined by rubbing them between the fingers. The seeds should be full and hard, and well studded with small round dust, of a golden color, at the base of the scales, and the stem of the hops should have plenty of this "condition," as in this is the weight. If the hop is too ripe, the wind will shake out the seed and dust, and loss of weight will be the consequence. If not ripe, these properties have not matured, and the weight will be inferior, but the hops will look better. If there is much picking to be done, and but few hands, it is best to commence rather early, for you will probably end late enough. In picking, bins are necessary. A bin consists of a wooden frame and a bag, called a "bin-cloth." This cloth is made from two pieces of sacking, thirty inches wide —one piece eight feet long, for the bottom, the other, twenty-one feet long, for sides and ends—formed into a bag, and suspended in the bin-frame. If necessary, this bag can have a partition in the middle.

The bin-frame requires two pieces, ten feet long, two by three inches, with the corners taken off and the ends rounded for handles. One foot from each end, bore one and a quarter inch hole for four legs two and a quarter

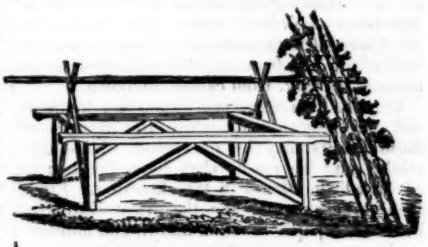


FIG. 7. *Hop Bin-Frame.*

feet long; also one foot from the end mortice in two end pieces, two and a half feet long, three and a half inches wide, and one and a half inches thick. Brace each leg to the middle of each side piece. At each end put a brace to each leg, and let these braces extend above the top of the frame two and a half feet, and cross each other six inches from their ends. These top pieces are termed the "horns." These crosses are a rest for the pole while the hops are being picked. The vines should be cut about one foot from the ground. The poles are then taken with the vines upon them, and placed against the rest. The hops are readily picked from the vine into the bin. In England, hop-picking is conducted with much system. An engagement is made with the pickers, the pole-pullers, the measurer, the poke-boy, the carrier, and the dryers. Thus the grower knows what each hand has to do. The ground is staked into lots of twelve hills square, and a stake is placed in the middle. The pickers are divided into companies, to which are assigned four bins. These bin companies are numbered, that each picker may know where he belongs. With each company is a bin man, whose duty is to pull the poles and carry them to the bins as the pickers require; he also must help hold the "poke," (a long bag of ten bushels capacity,) must carry the bag to the wagon, strip the vines from the poles after they are picked, and help move the bins from

one lot to another. He is paid by the day. Pickers are paid by the bushel. A tin ticket indicating the number of bushels picked is given to the picker, upon which he draws his money at the office of the grower. A boy attends the measurer and helps hold the bag. The call to work, to dinner, &c., is made by blowing a horn. As soon as the kilns are supplied for the night, (for drying goes on night and day,) the work stops. One measurer, who acts as foreman, is required to about twelve companies. After picking is over, the poles should be stacked.

A Vermont hop-grower uses bins about 8 feet long, 2½ feet high, 3 feet wide at the top, and 2 at the bottom. The object in having

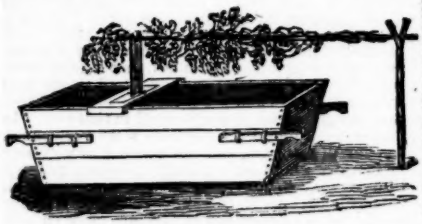


FIG. 8. *Picking-Bin.*

the bins narrower at the bottom, is to render it more easy for the pickers to stand close to them. A board is fitted across the bin near one end, having a narrow cleat nailed upon each end of it, so as to hook on to the sides of the bin. Upon the centre of this board is nailed another piece about a foot long and 4 inches wide, through which a mortice, 1 × 4 inches, is made to receive the standard—a piece of board 4 inches wide and 30 inches long, with a notch in one end for the poles to rest in. The standard is kept at the proper height by a pin, as seen in figure 8. A crotched stake is set for the but end of the pole to rest upon. At such a bin, three girls and a man can work to good advantage. The man pulls the poles, first cutting the vines two or three feet from the ground, lays them upon the bin, helps pick, and throws them off in a pile. By taking four or six rows, and six hills in each row, we bring as many poles together at one place asis convenient. When the bins are too full for convenience in picking, the hops are shoveled into sacks, in which they are conveyed to the kiln. The owner or some very careful man should attend to this and see that all are picked well. Where any are found with bunches of hops, or any large leaves, the picker should sort them and pick them all out. For this, the most careful man is required, and every careless girl in the yard will abuse him as much as she can. Good pickers will gather twenty-five to thirty bushels per day well, but wages should be based on about fifteen bushels for a day's work, as many girls will not pick more than that.

EXTRACTS AND REPLIES.

FAILURES IN WHEAT GROWING.

In the NEW ENGLAND FARMER, of April 6, I noticed an article on raising wheat in New England, by H. Poor. He asks wheat growers to tell their experience. I propose to do so at this time, although I do not think it will hold out much encouragement to my brethren to raise their own wheat. It is now nineteen years since I commenced farming, on what my neighbors termed a worn out farm, and as I was obliged to run in debt for the entire purchase, and had not a dollar with which to buy stock or tools, I felt that in some way I must raise on the farm nearly everything that was consumed in my family. The soil of my farm varies from stiff clay to sandy pine plains.

I have tried many experiments both with spring and winter wheat. It has always proved a failure—not perhaps wholly so, but I do not think I ever got over ten bushels of wheat to the acre, and most always of poor quality. During my experience as a farmer, I have learnt so to improve what is called "worn out" sandy plain land as to raise from twenty-five to thirty-three bushels of rye per acre on it, but the same land will not produce more than five bushels of wheat per acre. I have learnt to raise fifty bushels of corn per acre, but the same land will not yield a good crop of wheat. I can raise from two to four tons of hay per acre, but I cannot raise good wheat on the same kind of land. I have raised six hundred bushels of onions per acre, but when that same land was sowed to wheat the crop did not pay for harvesting, except for the straw. I have sowed a part of a field to oats, and a part of the same field to wheat, and got as large oats as man need wish to harvest, but not more than six bushels of wheat per acre. I have sown wheat with oats, but the oats got the best of it. I have sown wheat where the land was rich,—after onions for instance—and also where the land was moderately fertile,—following corn or potatoes; I have sown it on land long used as pasture, but the results have always been about the same—almost a failure.

I hope what I have written will not prevent the brotherhood from trying experiments with wheat, though I do advise them not to sow too largely at first. I have no doubt that on some farms, and in many parts of New England, wheat may be grown to some advantage. If we can be reasonably sure of twenty bushels per acre, and worth from four and a half to five dollars per bushel, according to Brother Poor, a good deal ought to be sown. M. S. KELLOGG.

Chicopee Falls, Mass., April 18, 1867.

REMARKS.—We are sorry that Mr. Kellogg has had poor success in raising wheat; but we thank him for so full a statement of his experiments. Failures as well as successes should be reported and published. What would the sailor say to a chart which refrained from indicating the places in which other ships had foundered or run aground?

BARNS AND CATTLE TIES.

Last season I built a barn 60x40 feet, posts 18 feet, with cellar under the whole. I boarded with spruce, one foot wide, and battened with spruce stuff two and a half inches square, split cornerwise, which makes a good substantial batten. I have 18 stalls or ties, so arranged that each creature eats by itself. I have used bows and chains, but cattle would frequently break loose. I now use straps and like them best of anything I ever used or have seen used. I pass the strap through the ring around the stanchions, and fasten the buckle end of the strap to the ring, about ten inches from

the buckle with a piece of leather about two and a half inches long, with a rivet in each end, which keeps all in its place. I have composted manure for 25 years, and think I have learnt something of muck and the way of treating it. O. F.

Tunbridge, Vt., April, 1867.

REMARKS.—Well, now, we should like to know what you have learned of muck, and something of your way of treating it.

OLD APPLE TREES.

I would inquire when is the best time to cut the "tops" from some large apple trees that I have just dug up and transplanted? How much should I cut off? The trees are about ten years old and bore last year.

As I want to set out a few creeping flowers, that will grow up this summer, will you be kind enough to name a few? I also want to raise a nice cluster of showy flowers; please name a few that would look well, and also, a handsome bush; which looks the best, flowering or otherwise? A READER.

East Kingston, N. H., April, 1867.

REMARKS.—It is a very unsuitable time to cut a tree now,—that is, April or May,—but as it is doubtful whether the trees would have sufficient root power to send out leaves on all their branches, the safest way will be to shorten in most of the twigs, so as to reduce the branches considerably in that way. Cut an inch or two from one twig, twice as many from another, and a foot from a third, if it will bear it. Then take out limbs from the inside of the tree, until the top is reduced to about one-half its original size—being careful all the time to preserve a true balance and graceful form of the tree. Wherever you cut, take the branch off close to the one from which it grew, pare the cut smooth, and cover it with a little gum shellac, dissolved in alcohol. Have it nearly as thin as water, and apply with a small brush.

We removed a twelve years old apple tree last spring when in leaf and blossom, treating it as we have described above. The foliage all fell off, but a new growth immediately succeeded, which was quite full and vigorous, and there was a slight growth of some of the terminal branches. This spring the tree looks as well as its fellows about it.

For three climbing plants take the Yellow Trumpet Monthly, and the Evergreen Scarlet Monthly Honeysuckle, and the Virginia Creeper, (*Ampelopsis quinquefolia*,) or American Woodbine.

For a cluster of showy flowers, take Asters in variety, Canterbury Bell, Cardinal Flower and Phloxes in variety.

For handsome bushes take the Rose-colored Wiegela, Japan Quince, (*Cydonia Japonica*,) and the Forsythia.

These few flowers about any house, set in proper positions and growing vigorously, will give it a charm and attraction that it never had before. Thank you for starting in the good work.

ADVERTISING IN FARMER—RAISING POTATOES.

My advertisement in the FARMER of "Seed Potatoes," brought in the orders to such an extent that I don't know but I will have to expend all the small profit on the sales to inform my patrons that I am not able to fill any more orders.

As I have been requested to detail my method of raising potatoes, perhaps I had better do it through the FARMER, though I presume but few if any will be benefited by the practice of one living among the rocks of Vermont from which the mountain streams run both north and south to meet, if at all, somewhere in the Atlantic Ocean. My custom is to break up greensward in the fall of the year; next spring sow with oats, and the following season spread and plow in a suitable coat of green manure to make the land sufficiently rich, after taking off a crop of potatoes, to bear a crop of grain, and stock down to grass. Thus a single piece is kept up but three seasons, taking two crops of grain and one hoed crop.

I have tried various methods of potato seeding, but my greatest success has been when I have used the least seed, cutting potatoes into pieces containing only two or three eyes and dropping about eighteen inches apart, one piece in a place, with rows three feet apart. The first that I ever planted in this way was a choice variety, and the amount of seed seemed so small, that after all were covered except the last two rows, I took up the seed from the last row and put it into the other, making two pieces instead of one in a hill in that row. In harvesting I found the potatoes were very much smaller in this row, and not much if any greater yield than where only a single piece was put in a hill. It may be necessary generally to hoe them twice in order to destroy weeds; but, if it is, the work should be done before they are large enough to be injured by doing it. If stray weeds come up afterward they should be pulled and destroyed. I am not obliged to hoe but once, and that not particularly on account of weeds, for my farm was not remarkably weedy when I bought it, and they have been growing beautifully less ever since.

W. I. SIMONDS.

Roxbury, Vt., April 19, 1867.

REMARKS.—Friend Simonds is not the only one who has experienced the good results of advertising in the FARMER. Our circulation is so large, and among such a reading class, that any announcement in our columns cannot fail to attract attention.

CHANGING SEED.

The belief in the beneficial effects of changing seed for potatoes and other roots is very prevalent among English farmers. They also favor a frequent change in the seed of wheat and other grain. If the objections to in-and-in breeding of animals is based on philosophical principles, why should we not expect that a similar practice with roots and grains would result equally disastrously? From my own experience and observation, I believe that all kinds of roots grown year after year from the same seed and on the same quality of land will gradually deteriorate. If I go to my neighbors across the way and buy my seed potatoes grown upon land and with manure similar to my own, I should not expect to see much difference; but if I go several miles and obtain those grown upon a different soil and under different treatment, I should look for a difference both in quality and in quantity. Exposure is also important. Potato and other root crops, grown upon land that is exposed to heavy winds and storms will be more stunted in their growth than those grown in a more sheltered and warm place. Five or six years ago I bought of a neighbor a mixture of Irish Greys and King potatoes. I told him I should sort them when I got home, as I had always kept my varieties separate. He advised me not to do so; remarking that the Irish Greys

would not grow as well nor be as productive alone, as when mixed. As he was an old man and a practical farmer, I took his advice, and have since found others who agree with him.

I must repeat what I said in my article on wheat, that I have great faith in the beneficial effect of salt on land situated far from the ocean, and planted to root crops. EDWARD HEBB.

Jeffersonville, Vt., 1867.

USE OF SUPERPHOSPHATE.

In April, 1866, I bought one barrel of superphosphate of lime. I sowed some on my pasture, and some was used on potatoes, corn, and garden vegetables; but I never could see the least benefit from its application, although I watched the pasture very closely. I took some superphosphate and mixed it with muck and dry ashes, and applied it to some small apple trees by hoeing the dirt from around them so as not to injure the roots, then applied about three pints of the compost and drew the dirt back. The fair growth of the trees, and the large growth of grass about them, caused me to think that the superphosphate would do well to compost. O. P.

Tunbridge, Vt., April 15, 1867.

IMPROVED STOCK IN CANADA.

The directors of the Compton County Agricultural Society met at Compton Centre, March 16, for the purpose of arranging list of premiums, &c., for the Fall Fair. After transacting our business, M. H. Cockrane, Esq., one of the members of our Board, invited us to visit his farm, some two miles from the village, for the purpose of examining the thoroughbred stock which he has imported or introduced into the counrty. We noticed first about 50 excellent swine, old and young. His arrangements for their comfort are admirable. We then examined some beautiful specimens of the Clydesdale draft horses, and afterwards his thoroughbred short horns and Hereford cattle. He has bulls of both breeds from calves up to the Duke of Oxford, a short horn, now five years old, imported and formerly owned by the Compton County Agricultural Society, and to which farmers here are much indebted for good stock. He has also some splendid cows, of both breeds, imported from England, Kentucky and Canada West, with some few yearlings, one of which, purchased at the Provincial Show, Canada West, last fall, took their first prize, and weighs now 1250 pounds. A just idea of the convenient arrangements that Mr. Cockrane has made for the health and ease of management of his stock, can be formed only by visiting his premises. He has just remitted by a Canada West importer, I believe, $7000 to England for choice animals, one of which is to be an entire horse of the Suffolk Punch breed.

After feasting our eyes at the barn and stables, we were invited into his house, where our appetites were most hospitably feasted in their turn.

Of the cheese factory, built last year by Mr. Cockrane, I gave you some account in the early part of last winter. I will soon send you a notice of the time and place of holding our next Fair, and an urgent invitation to all readers of the FARMER who can make it convenient to do so, to attend the exhibition of our society, and also to visit the farm and stock to which I have thus briefly alluded. HIRAM FRENCH.

Eaton, Compton Co., C. E., March 18, 1867.

FROGS.

The season of frogs has come again. It is a pleasing sound to the lovers of nature, and wakes up old thoughts and old associations. A few remarks on the natural history of the little croakers and peepers may not be out of place in the columns of the FARMER.

The first sounds we hear are from croakers. A thousand voices are vying with each other in a strange medley. You approach a pond and you will see hosts of the little croakers lying flat on the water singing with all their might. You catch one of them and you will find him to be of dark uniform green. Keep him out in the warm sunlight awhile and he will turn to a light drab color. Another sound is soon heard blending in with the croakers. It is from a shy fellow. Who has seen him? Who can find him? As you approach his retreat, he is silent, but wait a little—keep still. The sounds start up under your feet, to the right, to the left, but you can't see him. Nor will you hear the sound of a ripple as he dives into the water. The fact is, you are not looking for the little diminutive thing that he is. I had the good luck to capture one. I found him on a little twig, and saw him in the act of singing. As he sung, his throat looked very much like a soap bubble. I caught him in my hand; he was of a light green color, measuring only an inch in length, with a cross on his back like an X. I found him described in the books under the name of Pickering's Hylodes.

I have never seen half a dozen in my life. They are so near the color of green vegetation, and so small, that they are not easily noticed. C. S. P.

CULTIVATING STRAWBERRIES.

Select a suitable piece of ground; enclose it with boards four inches wide; cover the ground two inches thick with manure; spade it up, mixing well; cover the whole two inches deep with muck; mark off one foot each way; set the plants the first week in August; water them until they get well started, and next June you will have a good crop. Then weed and you will have another crop the next year; so you can get two crops and not have to weed but once. This we have found out by experimenting, as the FARMER advises, and know it to be the best way. W.

Clarendon, Vt., April 20, 1867.

REMARKS.—There may be more weeding on a bed set out in May, but there will be less watering, and we think a better crop the next year.

KILLING BRUSH.

I have noticed in the FARMER an article speaking of salt to kill brush, and other wild substances. I have about three acres of land covered with whortleberry brush, which I would like to kill out without plowing, if it can be done without too much expense. If you, or any one else, will inform me how much salt it will take to the acre, you will confer a favor on an

OLD SUBSCRIBER.

Northbridge, Mass., April 14, 1867.

REMARKS.—We do not recollect what article our correspondent alludes to, but have the opinion that it would cost more to kill the brush with salt, than it would to cut and burn it, and then reclaim the land by plowing and cultivating.

Salt is undoubtedly excellent for the land in certain quantities, but it seems to us that if enough were applied to kill a whortleberry growth, that nothing else would grow there, until a deep plowing and thorough mixing had taken place.

If the land is too rough for plowing, and damaged salt can be obtained at a cheap rate, it might be an economical process to cut or pull up the

bushes, dig up the mosses, and uneven places, throw the whole together, and mix salt with the mass as the pile is made up.

It would require two or three years to bring it into a fine condition, and would require overhauling once or twice a year, and perhaps fresh additions of salt as the work went on. When completed, this would form a capital dressing for the pasture.

The cattle would browse the tender shoots that would spring up from the roots that were left in the ground, so that many years might elapse before the bushes would gain any considerable growth.

Try an acre in a manner something like this and report to the FARMER.

INCREASE OF BIRDS AND INSECTS.

The pretty severe laws for the protection of birds are based upon their presumed value for destroying insects injurious to vegetation. But what is the result as a matter of fact? The birds have increased in this town during the past ten years very largely,—it would be safe to say tenfold. Cultivators of fruit have given the most efficient aid to the law, and the orchards and gardens are vocal with the songs of the numerous small birds, especially protected by the laws. But have not the insects increased in the same or greater ratio? Every year, I in common with my neighbors, make a clean sweep of the caterpillars, going over the trees several times so as to make the destruction certain; and yet every succeeding year brings an increase of these nuisances. I have been an ardent defender of birds and of the bird laws, upon the supposition that an increase of birds would within some reasonable time give relief. I have submitted quietly to the annual loss of a portion of my strawberries and sweeter pears and a larger portion of my finest cherries and blackberries, with the fullest faith that while the birds were devouring a fair share of these delicacies, they would rid me of some proportion of the insect pests of the orchard and garden. They have not done so. The insects are more numerous than ever, in spite of hand crushing, brushing, scraping, and a deluge of soft and whale-oil soaps. My experience is verified by that of my neighbors. To what shall we look for relief? The more trees we have, the more birds and the more insects. The ravages of the canker worm, caterpillars and borers are growing worse from year to year, and fruit-growers are debating whether they can afford to support and feed the birds as well as the insects. Already one orchard of four hundred noble apple trees has been denuded of its trees and the land laid down to grass, because the owner found it impossible to prevent the ravages of the insects, and others are debating whether they had not better follow in the same track. If you can give us any comforting advice pray do so.

Dorchester, Mass., April, 1867. J. A. H.

REMARKS.—We are fellow-sufferers with our correspondent, and cannot administer much comfort. Is New England peculiar in this respect? What have other people done in England, France, and Germany? Have not destroyed the birds, we trust. That insects have increased, there is no doubt. But does not supply usually increase demand, as well as the reverse? If we supply a large variety of food upon which insects of all sorts delight to feed, is it strange that their number increases? You destroy the caterpillars on your premises, but your neighbors, perhaps, permit thousand of wild cherry trees and other plants to grow luxuriantly all about them, which supply food abundantly for legions of these insects. A universal onslaught will only exterminate them, and so of other nuisances.

TOP DRESSING GRASS LAND—RAISING ROOTS.

I see a great deal in the FARMER about top dressing, and perhaps a little of my experience on the subject may be acceptable. About thirteen years ago, I bought two acres of land, one acre of which was plowed, the rest in grass, except one-half acre on which the buildings and some apple trees stood. The first year the hay hardly paid for mowing. In the fall I cleared out the woodshed and spread its contents on the grass land. As soon as I could, I seeded down the remainder to grass, and have mowed it yearly, orchard and all. I have continued top dressing ever since, though for the few first years I had but little to apply. After putting what I want on my potato patch, I now spread the rest on my grass. In the fall I put on my summer manure. But having come to the conclusion that there is a loss in applying it in the spring, I shall let my manure lie this year in the shed till fall.

I usually mow twice; about the first of July and September. I have about one acre in another place among the rocks, which I mow but once, allowing my cows to take the second crop. This some of my townsmen think the best way, believing that it does not hurt the land so much for the cows to gnaw it down to the roots, as it does to cut it off with a scythe; but I don't think so. I do it simply because my cows want something more than they can get in the pasture during the latter part of the season. On the hay which grew on these three acres, I wintered, in 1865-6, two cows, a horse, and four sheep, and kept two cows six weeks. The past winter, 1866-7, I have kept a calf in addition to the above stock, but I am a little short for hay, as my second crop last year was not more than half the ordinary yield. These three acres usually produce fodder enough for two cows, a horse, and four sheep. In this northern country we find that it takes two and a half or three tons of hay, or its equivalent, to winter a cow. About three-fourths of the apple trees have died out, and the half acre of land near the buildings, produces at least three tons of hay, as good as any grown in this county. I have been in the habit of raising from thirty to fifty bushels of carrots every year which my animals eat, except a few which I sell for coloring butter. The past year, however, I raised about sixty-three bushels of carrots and mangel wurzels, and feed all but eight or ten bushels. These were raised in my garden on thirteen and one-half square rods; the mixed seed being sown broad cast. When harvested I had forty-three bushels of carrots and twenty of mangel wurzels. True, this is not quite as big a story as that in the FARMER, April 20, where one man is said to have raised sixteen hundred, another twelve hundred bushels per acre, as mine comes a little short of eight hundred. But I do not manure so high as some *premium* farmers. I weighed one mangel wurzel that weighed five pounds, and another three pounds. Some of them will measure near two feet in length. A SUBSCRIBER.

Westfield, Vt., April 25, 1867.

POTATOES AND CORN.

There are various and conflicting opinions as to the best mode of cultivating potatoes. While some advocate seeding with small potatoes, a majority

condemn the practice and plant the largest. Some say, cutting the potato injures the germ; others say a better yield is had by having three to five eyes in a cluster, planted in drills ten to twelve inches apart.

Judge Baxter, of Bellows Falls, Vermont, said to me many years ago, that he took a peck of lady finger potatoes, and patiently sat down and cut out every eye separately, and planted them singly in drills four to six inches apart. From the peck he dug twenty-six bushels. This fact upsets the theory, that cutting injures the germ.

Your correspondent, "E. B.," of Derry, New Hampshire, having publicly answered my private letter, I feel constrained to reiterate the statement that three or four butts to the hill was excessive seeding, and I think will not meet the approbation of good farmers. A handful of corn in a hill will give small ears and small stover. All esculents want room to grow. I was much interested in the general statement. Your cutting off the tips is the Long Island practice, as they work for marketable potatoes. Should it be economy, plant the tips and make small potatoes for stock. Then all the seed is saved.

Does not hilling too much, cut off many little rootlets, and in drought turn the water from the hill into the hollows, away from the roots that are drawing nourishment through every eye into the tuber? Perhaps flat hills would be better adapted to dry than moist lands. The flat tined fork is better than round, for pitching out potatoes or other vegetables, especially in drills.

Corn, as we know by its strong diverging roots, seeks its nourishment like a tree in all directions, to make "the blade, the ear, then the full corn in the ear." To meet the case, spread and plow in your manure, and get rid of the tedious process of dunging out in the hill. Raw manure in the hill ferments, heats, and yellows the tender young corn, and when its roots get away from it, it begins to grow green and strong. Compost added in the hill would of course much increase the crop. Hill as little as possible, and cut off as few roots as possible in cultivating and hoeing. H. Poor.

Brooklyn, Long Island, April 20, 1867.

DISEASE IN CHICKENS.

Is there any remedy for the disease which this year attacks so many chickens, showing itself chiefly in weakness of the legs, and usually proving fatal?

What can be done for a hen (Sebright Bantam) which lays soft eggs, though having plenty of lime, &c.?

Information on these subjects will very much oblige F. M. R.

Brookline, Mass., April, 1867.

Remarks.—The trouble with the chickens is not an epidemic, we think, but is owing to some local influence, such as exposure to dampness, or cold, or placing too many chicks with one hen. The latter is a mistake often made. The young chickens need the animal warmth of the mother quite often, and nature has supplied her with an unusual amount for a considerable time *after* they are hatched as well as during incubation.

An unvarying rule should be, to keep chickens *dry* and *warm*, and keep them in the sun as much as possible at the same time. When this rule has been strictly observed, we have rarely known young chickens or turkeys to fail in growing rapidly and vigorously. It would be hardly expected, however, that there would be *no* exceptions. Without knowing the particulars in the above case, we should conclude that their sickness is occasioned by dampness and cold.

It is not impossible, that diseases in poultry are hereditary. Why not as well as in cows, horses and other animals?

Hens occasionally lay soft eggs—but we have never known one to do so habitually. Will some of our careful poultry raisers come to the aid of our correspondent and ourselves?

RINGING FRUIT TREES.

I take the liberty of writing you in relation to an experiment made by my neighbor, Capt. Joseph Davis, upon two apple trees that are growing in front of his house in this village. The trees in question had always been barren, with perhaps the exception of bearing one year a few inferior apples, yet they blossomed full each year. Having noticed that a barren tree, from which a portion of its bark was accidentally torn while in full blossom, bore a good crop the succeeding fall, he at first girdled a large limb of one of his trees near the trunk, clear to the wood, taking care not to *cut* the wood, removing about one-half inch in width of bark the entire circumference of the limb. The result was, the limb was heavily laden with fruit, in fact "*hung full*," while upon the remaining branches there were no apples.

The following year he girdled the trunk of the same tree, next to where the branches put out; and the result was the *entire branches* were so heavily laden with fruit, that he was compelled to prop them up to keep them from breaking. Last year he girdled the other tree in the same manner, when it was fully in blossom, with the same result. In all these cases, the trees, to all appearance, are not at all injured by this process of making them productive. Mr. Davis has been frequently urged to publish the result of his experiments, but has thus far declined lest they might prove fatal under other circumstances, but having demonstrated the beneficial effects of the process, he has consented to place it before the public.

L. H. Chandler.

Baldwinsville, Mass., April 15, 1867.

Remarks.—This process for inducing fruitfulness, is well known to fruit growers, and is usually termed *ringing*. Its object is to prevent the natural downward passage of the sap, and to force it into the branches above the girdle, and thus to secure fruit of greatly increased size and amount. Premium specimens are sometimes produced in this way for the tables of our annual fairs. But Mr. Downing says it is always more or less injurious to the health of the branch or tree, and he entirely disapproves of the mode, except as a curious experiment. Baker says, it cannot be recommended for general use, though allowable in certain cases. Lindley says, if performed extensively upon a tree, it is apt, if not to kill it, to render it incurably unhealthy. A cord tied snugly around a limb or the whole trunk, is said to produce an effect similar to ringing, with less injury to the tree.

CRANBERRY CULTURE.

I notice in nearly all that I read on the cultivation of the cranberry that a considerable outlay is recommended to prepare the ground for setting the vines, which is discouraging to a young begin-

ner with small means. I therefore propose to give a short account of my operations and success in raising this fruit.

I commenced in 1843 by ditching just to take off the water from a swamp of seven or eight acres from which I had cut a good growth of wood and timber, and built a dam to flow the same at $25, on contract, and left it for three years, supposing the water would kill the bushes and all green vegetation. But the water was so shallow that it evaporated in summer so as to show the ground, and the brakes and bushes lived through the flooding. In August, 1846, I drained off the water and in October cleared up the brush and burned it, and set about one acre to vines, in bunches about the size of a quart measure, cut from beds with a hoe, three feet apart, by chance.

I found a few patches of natural vines which grew finely after the flooding and bore well.

I had nothing to call a crop till 1850, when I had about twenty bushels. They increased to fifty barrels in 1855, and brought $13 per barrel. Since then they have increased, but are now on the decline. They have had no cultivation except mowing over the vines to top the grass and bushes.

On another small swamp, with a low place nearly round it—the centre higher—with a thick bed of peat partly decomposed, I cut the bushes, covered the stubs with water one summer, cleared the bushes and burnt them, and set the vines eighteen inches apart; the vines to set were pulled up by the roots. I don't get a crop as *soon* as some represent, but this has given beautiful crops.

A pond-hole of from one-half to three-fourths of an acre which held water so late in summer that no tree, bush or grass grew in it, had six inches of rich, black mould, then four or five inches of a clayey substance, then pure white sand.

I ditched and set vines in it, it being near my house. They were set at odd times, and almost all times of the year, except when the ground was frozen. Some of them have not come to maturity and bear but few berries. It has been kept clear of weeds of all kinds. In 1865 I gathered 153 bushels, heaped measure, and *three bushels, three pecks and six quarts from one square rod!*

One of my neighbors who has gone into the business says it is as easy to raise cranberry vines as witch-grass. I know a meadow, of three acres, topped at two shillings per rod, which for want of three inches of sand, has come up to grass—apparently from seed,—thick enough for a full crop, and is now a meadow of grass and vines; the vines have been growing eight or nine years. Last year they gathered about thirty bushels, the best crop they have had. My best crop, 113 bushels, was in 1865. A SUBSCRIBER OF THE FARMER.

REMARKS.—We are greatly obliged to our correspondent for the above account. Several years ago we visited his cranberry meadows and found some of the best examples in cranberry culture that we have ever seen. His statements are reliable. He is now quite advanced in life, and we suppose withholds his name, because he would be scarcely able to answer inquiries addressed to him on the subject. In a small quantity, which he once sent us, we easily selected *twelve* berries, which, laid end to end, measured full twelve inches in length. They were of the bugle variety.

GRAPE TRELLIS—TRANSPLANTING EVERGREENS.

I have been a constant reader of the NEW ENGLAND FARMER for thirteen years, and have the numbers on file. They form a complete agricultural library, which, for cheapness and real value, cannot be excelled. Reading them is like visiting the farmers of New England and conversing with them upon all subjects connected with our profession. It is very interesting to look over the market reports and compare past and present prices. As there is much said about grapes at this time, I will give you my plan for a trellis. I set some good posts, about six feet high, then take some plank twelve feet long and six inches wide, spike one end to the top of the posts, letting the other rest on the ground, then nail slats across the plank and you will have an excellent trellis, which will support the vines much better than an upright one. The vines can be covered in winter without taking them down, which is very injurious.

I wish to inquire, through the FARMER, the best time and method of setting cedar and other evergreens. C.

Washington Co., Vt., May, 1867.

REMARKS.—The latter part of May and June are favorable months for transplanting evergreens. Just as the buds are swelling to burst is said by some to be just the nick of time. But, whenever transplanted, remember that a tree out of the earth should be treated much like a fish out of water. To as little air as possible, and to no sunshine at all should the roots of evergreens be exposed. Remove them in a rainy day, if you don't like to work nights and mornings.

RAISING POTATOES, IN VERMONT.

Lest you, Mr. Editor, and others remote from the Green Mountains, should think that all Vermont farmers raise potatoes as Brother Simonds tells you, in your issue of May 4, that he does, I want to say, point blank, it isn't so. His is the identical method my father and his neighbors used when I was a boy of eight years old, and which was continued through my minority.

I am now about to turn the maiden lady's second corner,—sixty—and my present method is to spread in the spring from thirty-five to forty-five ox-cart loads of green manure on an acre of mowing land, that needs improving from less than a ton to over two tons product of hay. Take a large double swivel plough, No. 85, I obtained some ten years since of Ruggles, Nourse & Mason, two yoke of oxen, and plough the ground from nine to ten inches deep. Next spread on a moderate coat of well rotted manure, and harrow it in well,—the rough furrow of the double swivel plough, facilitating its commingling with the soil. Plant rows three feet apart, hills from fifteen to eighteen inches, with from three to five eyes of the California seed, near the top of the ground. In hoeing, hill up slightly, though it is with a vengeance we keep the weeds where they should be, for the more manure the more weeds. Crop, three hundred bushels; a profitable cattle feed. We raise table potatoes after the same process, but none for the market as we live twelve miles from a depot. Seed to grass the next year—the more of the grass seeds the better,—but in connection with a thin crop of wheat or oats, keeping the land up only two years.

We also plough and manure in the same way, seeding down to grass in connection with a thin grain crop the first year, keeping it up only one year, and find it tends much to the enlargement of the hay mow.

Some of my neighbors planted corn and potatoes last year, after Brother Simonds' practice, on oat stubble, and had both entirely destroyed by the pestiferous wire worm. Other fields planted on what we term the "sward," escaped unmolested.

We have wintered this season eighty-eight head

of cattle and horses, and have not been put to any inconvenience by not advertising our surplus produce in the FARMER. It has been taken at the door; wheat at $2.50, corn at $1.70, seed oats at 75 cents per bushel, California potatoes at 40 cents, and a much larger amount of hay called for at from $15 to $18 per ton, than we could supply. The only inconvenience experienced has been to say no, when no more could be spared to supply the present unusual demand for cattle feed. I might add we are accustomed to feed out hay and coarse grains on the farm to the extent of its production, excepting such a time as this.

OLD NED.

Washington County, Vt., May, 1867.

HUNGARIAN GRASS.

Can you, or some of your correspondents, *who know from experience*, inform me and others of the value of Hungarian grass, compared with timothy and redtop? Does it require heavy manuring, and what kind of land is most suitable for it?

A. W. GREELEY.

Nashua, N. H., April, 1867.

REMARKS.—We cannot tell you of the *exact* value of Hungarian grass, as compared with timothy or redtop. We should judge, from an experience in feeding it out to stock, that it is not quite as valuable as timothy or redtop. Perhaps contains less oily matter. Land that will produce forty or fifty bushels of corn to the acre, will bring a good crop of Hungarian grass. It is an annual plant, and for that reason is much less used than it would be if it were perennial. Under many circumstances, it is a valuable crop,—as where it is desirable to keep land up, or where a crop of grain could not be got in. When properly cured, we have found it to be highly relished by horses and cattle.

CULTURE OF CRANBERRIES.

Please inform me, through the FARMER, of the culture of cranberries. What soil they thrive best in, and the cost of setting out an acre of plants. Is it too cold for them in Cheshire county, New Hampshire?

READER.

Cheshire County, N. H., 1867.

REMARKS.—The *cost* will depend upon the *condition* of the land to be improved. Some acres will cost five times as much as others. See an article elsewhere, on the subject by A SUBSCRIBER OF THE FARMER. If you attempt to cultivate the cranberry so far north, we should advise you to select places that can be readily flowed, in order to save them from late spring, and from early autumn frosts.

GRIT IN MAPLE SUGAR.

Having been a subscriber for the NEW ENGLAND FARMER for a few years past, I have become very deeply interested in the paper, and do not hesitate to recommend it to every one interested in farming. Being somewhat interested in the extracts and replies, I beg leave to make some inquiries.

In making maple sugar, there is something which is considerable of a mystery among us farmers, and has been for quite a number of years. I find in the sugar a fine grit, which I separate from the sugar, and sometimes find it in quite a large quantity. This grit is known among us farmers as "nitre," it is not discernible either in the sap or syrup; but when the syrup is boiled down sufficiently for good molasses, this grit (known to us as "nitre") makes its appearance. Its origin, or cause, has not yet been satisfactorily explained. Will you inform me through the NEW ENGLAND FARMER, of the cause or origin of this gritty substance? I would be very glad to hear from any one on this subject.

Will you inform me of the best time to set out apple trees?

G. M. B.

Worcester, Vt., April 17, 1867.

REMARKS.—Some experienced sugar makers will be kind enough—we cannot doubt—to answer the queries of our correspondent. We have no exact knowledge on the subject. But why should it not be ascribed to the same cause that produces grit in ashes, or the sharp edge of some grasses?

Set out apple trees now—the sooner the better. Those intended to be set ought to be dug out before the foliage starts.

"BONE FLOUR."

That pulverized bones are very valuable manure, there can be no doubt, although some of your correspondents deny the fact. I think I can comprehend the cause of their failure to realize the benefit of its application. Fresh bones that have not been leached or boiled to extract the oil (which is nearly all that is valuable as a fertilizer) are one of the most valuable and enduring manures that can be applied to any crop. The reason then, that so many have failed to realize any benefit from the use of bone manure, is that the soap boilers have extracted all the oil, or its good qualities have been dissipated by long exposure, without which the bones are nearly valueless. To collect these bones, a set of outlandish fellows prowl about with a horse and wagon, who enter our door yards, and spy around our buildings, picking up all the bones they can find, and stealing clothing or other articles that lie in their way. They are a great nuisance, and we have ordered them off our premises more than once, and received their curses for our pains. The tin peddlers offer the boys half a cent a pound for bones, and they scour the country and are about as bad as the foreigners. They will search the woods and by places to find the bones of some poor old horse or cow that has been dead twenty years, and sell them to be ground into bone manure, when there is no more virtue in them than in so much sawdust. This is the reason that your correspondents receive no benefit from its use.

North Pembroke, Mass., April 20, 1867. C.

"GRAFTING WAX."

I hope none of your subscribers will use the article advertised as "Grafting Wax." We have several trees nearly ruined by using it. It kills the bark where applied, and in nine cases out of ten, permanently injures the tree. The best grafting wax ever used is made of clay and horse manure—there is no danger in that. C.

North Pembroke, Mass., April 20th, 1867.

TO PREVENT SOWS EATING THEIR PIGS.

Give them some good bright early-cut hay daily, for a few weeks before the time for the pigs to come.

H. B. HOWARD.

Braintree, Vt., April, 1867.

—A Herkimer county, N. Y., dairyman estimates that 45 cows require 100 tons of hay to winter them through.

CULTURE OF WHITE BEANS.

There is scarcely any vegetable that is more acceptable or more economical and wholesome than the bean. It is easily raised, harvested and preserved, and may be prepared for the table in various forms, all of which are grateful, whether the bean has reached maturity, or is used in an unripe state.

We are not certain that we can assign a satisfactory reason why this crop is so seldom cultivated by itself, or why it is so rarely successful, when it is so cultivated. In some sections, the prejudice against growing the bean separately, or allowing it the entire use of the land, is universal, and although large quantities are produced, the vegetable is almost invariably the product of grounds devoted to Indian corn, as the principal crop—the bean plants occupying a position in or between the hills.

We find nothing similar to this practice in British agriculture, to which, indeed, the corn crop is unknown; but we find that beans are there much more extensively cultivated than in this country, although the climate of England is intensely damp—a circumstance which, with us, would no doubt be regarded as ruinous to the crop.

That the bean, in all its varieties, is susceptible of being grown separately, is a proposition which our knowledge of vegetable physiology, as well as the deductions of experience, forbids us to doubt. Though we have rarely seen it so cultivated, on an extensive scale, we have nevertheless observed its luxuriance and the unparalleled vigor of the plants when growing in small plantations, on light and well worked sands. It is generally believed that the presence of some other grass-feeding vegetable is necessary to ensure its maturation, and that it seldom ripens when grown separately, by itself; consequently, we rarely find it so planted; but this practice—like a great many others which have obtained wide prevalence—is to be attributed to a total misconception of the character and capabilities of the crop.

It is not necessary, by any means, that every leaf and pod of the bean plant be thoroughly ripe before pulling. If proper care be taken in stacking, beans that have not become hard in the pod will mature, and be as sound, white and valuable in the market, or for domestic use, as those which have ripened wholly standing in the field. A lot which we saw last year, that were pulled when every pod and stalk were green—because frost was anticipated—and stacked on stakes and left until thoroughly dry, were white, plump and sound when thrashed out, and were fit for any market.

We have tried various ways of stacking, but find placing them upon stakes set upright in the ground, the best. Birches make excellent stakes, by leaving upon them a portion of the branches next to the stem, some six or eight inches long.

For the New England Farmer.

FOREST TREES

TO TAKE THE PLACE OF TREES LOST OR DESTROYED.

It is not necessary to say anything about elms. Every body is familiar with the appearance and value of the American elm, and ready to assent to the opinion of Michaux, that it is the most majestic of trees. But this elm is not suited to our purpose, which is to make up for the loss of trees along the borders of by-roads and lanes. The elm is a voracious feeder, and sends out numerous roots near the surface, so that nothing, not even grass, grows perfectly well in its immediate neighborhood. It is incomparable for broad, public ways. For streets, in towns, the English elm is better.

The oak is the king of the woods. We have more than a dozen species in Massachusetts, all beautiful and all adapted to our purpose; for the roots of the oaks go down very deep, and thus leave the surface soil for smaller trees, and for shrubs and undershrubs. Although, if we wish the oak to succeed perfectly and show its unsurpassed beauties at all periods of its growth, we must give it the benefit of all the soil, from the surface down.

All the American oaks flourish in our climate, and the two varieties of the English oak at least as well as any of our own.

There are two groups of the oaks: 1. The White oak group—including the Over cup, the Post oak, the Swamp White oak, the Chestnut oak, the Rock oak, and the Chinquapin, the English oaks, and the Turkey oak; and, 2. Those that are like the Red oak, with the Black oak, the Scarlet oak, the Pin oak, and the little Bear oak. All these are beautiful, and some of them are as rare as they are beautiful, especially the Over cup oak, the Chestnut oak, and the Rock Chestnut oak, remarkable for their gracefulness, and the Scarlet oak, and the Post oak—the former for the extreme beauty of the foliage, at all seasons, and the latter for the singularity of its star-shaped leaves. It would take many columns to speak of the oaks as they deserve. Any of your readers who want to know more about them must read the books in which they are described.

There is another tree which, however well

known now, ought to be still better known and more highly valued. It is a model of neatness. The bark is smooth and clean, and of a cheerful color; the leaves nice and brilliant, in shade and in sunshine; the nuts very sweet; the wood very valuable. Literary people ought to respect it, as its German name gives us the word book; indolent or thoughtful people ought to like it, as it gives a deep, clean shade to recline in. No tree is fitter to be near a studious or a luxurious home than the beech.

The nut trees are shamefully undervalued with us. Trees which, everywhere in Europe, are carefully cultivated and furnish an important part of the food of the inhabitants, are here neglected or banished to distant hills and pastures. Such are the Black Walnut and the Butternut, to which might be added the tree which bears what we call the English walnut, which grows just as well here as it does in France. Each of these would make a handsome border tree. The Shell-bark hickory is a stately, graceful tree, and its nuts the most desirable of all fruits. It requires care and pains to cultivate, but it amply repays all that can be given to it. The chestnut tree is a very rapid grower—is easily raised from the nut, or from plants, interferes little with other trees, has all the elements of beauty in large proportions, and in summer makes the forest resplendent with its blossoms. Its nuts are singularly sweet, far superior to the European, and would, with care, be gradually improved in size. The only experiment for this purpose that I am acquainted with has been successful. John Lowell, well known by the fathers and grandfathers of this generation as the "Roxbury Farmer," left growing on his little farm in Roxbury, some chestnut trees, the fruit of which is as sweet as the common American, and almost as large as the European chestnut. Is there not some patriotic farmer, well to do in the world, living contentedly on his paternal acres, and building and planting to make a pleasant home for his great-grandchildren, who is willing to try the selection and care necessary to improve our native chestnut, hickory, and walnuts?

There are smaller nuts worth cultivating. The common hazels are very easily propagated by suckers or layers, or by sowing the sweet, delicate nuts. The beaked hazel is curious, but probably of no great value. The European hazel may be cultivated with ease and sure success; and its filberts are worth raising.

There are many species of whortleberries, blueberries, dangleberries, bilberries—all natives—which ought to be retained for their beauty and for their abundant fruits. Neither ought the blackberries and raspberries, low or high, to be neglected. These wild fruits are most healthy, and the gathering them is an occasion of most pleasant parties for children. Whortleberrying and blueberrying on the Pigwacket plains in Maine, and nutting along one of its streams, are among the most delightful memories of one old man's happy childhood.

Boston, May, 1867. G. B. E.

For the New England Farmer.

DOES PLASTER PAY?

This depends upon three circumstances, to wit: the soil to which it is applied, the season, and the kind of crop. On a loam, underlaid with limestone, and on that underlaid with mica slate, we have found it very valuable, increasing the amount of the crop from twenty-five to fifty per cent. On sandy or gravelly soils, we have also seen very fine effects from its application. Perhaps a good general rule to determine its adaptation to the soil, will be, to know that the latter is adapted to the growth of Indian corn, clover and most broad-leaved plants. On soils dry enough for these, we have seen its good results. On cold, wet, heavy lands its application is money thrown away. If the season after its application is vrey dry, its greatest effects will not be apparent that year, though we have seen many instances, where a good rain followed the sowing and dry weather followed, leaving it to remain dormant through that season. In such cases its benefits were seen the following year. We have also found it valuable when sown on grass land immediately after taking off the crop, when it gives the grass a vigorous start, preparatory to wintering. When sown on winter grain, fall sowing is especially beneficial. Here the method of application varies. Some roll their seed grain in it and think that sufficient; others sow it upon the land and harrow in with the seed, and another class wait until the grain is up and sow in the morning when the dew is on. Either way gives it to the soil, where it will result to the ultimate benefit of the crop.

Its effects are greatest on plowed crops, and where manure has been recently applied, though a less quantity of the latter is necessary than where it is used alone,—the two in connexion helping each other. By mixing it with yard or stable manure during the winter, once in two weeks—enough to whiten the manure heap, the odor of the manure is destroyed and its value increased in greater ratio than the cost of the plaster. It is excellent sown on all the grains and upland grasses, and is a great clover maker, and an almost sure destroyer of strawberries.

In old pastures, we have seen cases where it destroyed the old moss and introduced white clover in its place. White daisies and Johnswort flourish poorly after its application. Mixed with an equal quantity of ashes and thrown into the hill with potatoes, it is held by many to be just the aliment they need for successful growth.

Such are some of the uses to which we have seen plaster applied, and some of the results that have followed. In these cases it has paid, and that in a rich percentage. We cannot,

however, suppose the results will be the same in all cases. Soils and seasons vary and introduce a necessity for various modes of practice. Of course what has resulted favorably under some circumstances, may fail under others; therefore we can only say, that it has paid in very many instances by more than fifty-fold, and will on certain soils probably continue to pay, while on other soils and under different circumstances it will probably fail. Therefore no positive rule can be adopted for its general use. The farmer, who ought to know his own soil, must be the judge in the matter of its probable benefit. W. BACON.

Richmond, Mass., May 1, 1867.

For the New England Farmer.

HOW PLANTS GROW.

When plants have arrived at a certain stage of their growth, sexual development takes place under the influence of a universal law affecting all organized living beings. This takes place in most cases before the growth is completed; that is, before the plants have reached their full size. In most annuals it commences when the plants are about half grown, as in the grains and grasses, and the growth of the plant in size and vigor goes on at the same time with the process of fructification. In most fruit-bearing trees and shrubs, the flower buds are developed before the growth of the foliage is completed. The same thing is true in the grape and the strawberry and in many perennial plants. The process of fecundation requires that the flowers should receive the full force of the sun's rays, and the foliage is not yet large enough to intercept them.

When this process is completed and the sun's rays become more direct and scorching, the expanding foliage protects the forming fruit as well as elaborates sap for its nourishment. The period of sexual development differs greatly in different plants. In some it occurs in a few weeks after they spring from the soil. In biennials not until the second year. In most trees several years are required. In some plants, as in the century plant, many years are passed before the sexual influence is felt. Most flower buds assume the form of a cup. The ovum or ovary is found imbedded at the bottom of this cup. The cup is formed externally of thick fleshy leaves which enclose and protect the ovum and other delicate and tender organs. Within these protecting leaves are the petals, springing from points between the thick outer covering and the ovaries. Within these are the stamens, each bearing a crown of pollen or fecundating dust, called the anther. The Greek word anthos, or flower, is derived from this, the indispensable organ of all flowers, without the presence of which all the others would be of no avail. Then the pistils spring from the ovaries. They are so many tubes communicating with the internal parts of the ovaries. When these organs have arrived at a certain stage which may be called the orgasm, or time at which they are ready for impregnation, the mouths of these tubes contain a glutinous fluid by which the pollen falling from the anthers is collected and conveyed to the ovaries. When this has been accomplished, the stamens and pistils wither and fall. The petals also fall away. The ovary begins to enlarge, and the stem upon which it is supported begins to lengthen. In some cases this stem becomes quite long, as in the strawberry and cherry. The ovary now begins to assume the shape which the completed fruit is to have. We then say the fruit has set. Just at this point of time, a large part of the forming fruit usually withers and falls, either because the pollen has not reached the interior of the ovary, or from the injurious effects of the wind or weather. But in favorable seasons fecundation is effectually accomplished in a sufficient number of instances to secure the great purpose of nature, the formation of seeds for the continuation of the species. This is the ultimate object of efflorescence and fructification. The seeds are formed and arranged within and around the ovaries in various modes and fashions. Sometimes, as in the apple and pear, the seeds are enclosed in cells in the interior, and the body of the ovary is changed into a large fleshy pulp. In others, the seeds stand out naked upon the surface, as in the strawberry. In others the coverings that enclose the germ are converted into strong fibrous husks which are packed, layer within layer, over the seeds for their protection, as in the maize. Sometimes they are enclosed in sacs or capsules called pods, which consist usually of a thin, soft internal layer, and a stout, thick external one; sometimes the seeds, as in corn, are arranged in long rows packed closely together, and sometimes in circles upon the upper surface of the ovary, as in the hollyhock and mallows. Sometimes the seeds are each covered with a thick, firm scale, as in the pine, which, like a roof, protects it. The seed of the pine requires two years for its growth and ripening, and therefore needs a protection that rain and frost will not destroy. To some seeds, a fine membrane, like the wing of a fly, is attached. The seeds of the elm afford an instance of this. These seeds, when ripe, are shaken off by strong winds, which, by means of their membranous wings, transport them to a distance from the parent tree. In some plants only female organs are developed, while others of the same species, produce only those of the male. In the greater number of plants, the organs of both sexes are found in the same flower and supported on the same stem. These are called perfect flowers, while those that have only the organs of one sex are called imperfect. The wind is the principal means of conveying the pollen from the anthers to the opening pistils. At the right season, if the air is dry and clear, the atmosphere is filled

with a cloud of pollen like fine dust, some of the particles of which fall upon the mouths of the pistils, and are held by the glutinous fluid of which we have spoken. Around a staminate, or male plant, especially a tree, this phenomenon may often be witnessed in a still warm day. This cloud of pollen is carried to a great distance by the wind, and if it falls upon good ground, ready to receive it, it quickens the sperm cells of pistillate flowers, and leads to the production of fruit. One staminate flower is often sufficient to fecundate quite a number of pistillate flowers. Thus one male strawberry plant will fertilize a number of female plants growing around it. The cultivators of this fruit avail themselves of this fact, and occupy nearly the whole ground with fruit bearing plants. J. R.

Concord, Mass., May, 1867.

For the New England Farmer.

THE GARDEN IN JUNE.

There are a few general principles applicable under most circumstances, which should be borne in mind by every gardener; such as, that hoeing or stirring the soil when it is wet is not the time to do the greatest amount of good; that hand weeding may be advantageous at such times, as any disturbance of the roots of plants then is sooner remedied than when the soil is dry. Watering plants in dry soil is of little avail, unless the soil be well soaked all around the plant and below the surface; if done at all, it should be done at evening and the soil stirred on top early the next morning, or, what is better, a light covering of soil sprinkled over the watered portion.

Asparagus.—Do not cut too close, or too late, as the roots may be injured thereby. When it gets spindling or stringy, cease cutting; hoe and clear off all weeds and dress with superphosphate, and let it grow.

Beans.—Those already planted will need frequent hoeing when they are dry; never hoe when they are wet, as it causes rust or other disease. Plant bush varieties for a succession for cooking or pickling; they are good when canned for winter use. Sometimes pole beans planted the first of June will mature a crop, if forced by liquid manure.

Cabbage, Cauliflower, Broccoli, &c.—May be transplanted the latter part of the month for fall and late use. Cauliflower frequently fails for want of moisture.

Cucumbers.—Plant the last week in June for pickles. Protect all vines as far as possible from the striped bug, by dusting with plaster and fine soil and by frequent hand picking. The eggs of the squash bug are deposited on the under side of the leaf; hunt and destroy before hatching.

Egg Plants.—Transplant into good soil abundantly manured with good horse manure; hoe and water frequently.

Fruit Trees.—Dwarf pear and other fruit trees should be trained to good shape by pinching out superfluous shoots and checking the growth of too much wood.

Grapes.—Tie up the branches and pinch out unnecessary shoots. Have an eye for the insects, and if signs of the mildew appear, dust with flour of sulphur freely. Rose bugs are a great pest when the vine is in blossom; sprinkling plaster, hand picking and frequent disturbance are about the only remedies known.

Tomatoes.—Train to trellises or stakes and pinch off the leading or main shoots to increase fruitfulness.

Weeds.—Give them no quarter, but nip them in the bud by keeping the soil stirred.

W. H. White.

South Windsor, Ct., May, 1867.

For the New England Farmer.

THE FUTURE FRUIT SUPPLY.

The question of the future supply of fruit for our markets, both for home use and for export, is, to New England, of great importance. For a year or two past, many single acres in this region have given a return as great as from twenty-five to forty acres of good land in wheat have done in the States west or south of us. And the decline of old, bearing trees is so extensive, from natural causes, that the new orchards are by some believed to be unequal to balance accounts, with the decay of old ones.

There is a constant increase of demand for home consumption and for export, for fruit, especially for winter apples. What is to be the future supply of apples for proper use? Good fruit will be wanted, and if cider is not used for anything else, much will be used in manufacturing vinegar.

When a clear profit is made for orcharding, of hundreds of dollars per acre, occasionally, it becomes all to inquire if the probabilities of such a return are not increasing rather than the reverse.

It seems to be very important to the future interest of the whole people, consumers and producers, that greater care should be exercised, and more judicious efforts be made to preserve the young trees which have been and are being set. Great numbers of trees are set so poorly as to make them worthless. More are neglected when they need mulching, and they die. Many others, still, are allowed to be destroyed by cattle. If they are worth buying and setting, they are worth taking care of. But they are not taken care of; and they, therefore, give no future promise.

Care of trees will pay, if care of lambs and pigs will pay. And old trees need not die of neglect, as they are now dying by thousands, in New England. To trim up suckers, and trim out tree tops, and defend them against foes, and feed the soil for them, will pay. There are old trees enough, now, in New Eng-

land, which have never been grafted, to produce immense quantities of fruit, if properly grafted and cared for.

It is amazing how little care and judgment has been shown in this regard by many farmers among us. Trees have been stuck full of grafts, and then the natural shoots left to overpower and kill them all. If there is any one thing in which there is a greater appearance of imbecility than in anything else in farm management in country towns remote from our large cities, it is, it seems to me, in relation to tree-culture.

One item in relating to manuring, I would not omit. I think I have many proofs that the droppings of hens or turkeys, even when composted with muck, are a dangerous and destructive stimulant for trees. It may cause them to flourish for a short time, but then die. I have numerous facts in mind which seem to declare as above, but this paper is too long already, and I will not narrate them.

Lee, N. H., May, 1867. A. G. C.

MATERIAL FOR COMPOSTS.

The truth of the axiom, that no man, how great soever may be his zeal and industry, can hope to succeed as a farmer, without the aid of manure, is probably what every practical person will at once admit.

Want of manure, indeed, is one of the most perplexing annoyances with which the intelligent cultivator is called to contend. Yet it is one which the exercise of proper forethought and economy in accumulating materials will enable him to obviate. There is probably not a farm in the land which does not contain within its own limits the resources for its fertility, and which might not be rendered productive without the application of a single particle of manure from abroad.

By composting, by *turning in green crops*, by seeing that all the numerous fertilizing agents in the yards, cow, sheep, and hog cotes, in the kitchen, privy, and other places, are rigidly turned into the appropriate channel, the land would soon assume a new character, and the richest harvests salute the hand of the proprietor, where only barrenness and sterility were seen before.

If the farmer could only realize the advantages which would accrue to him from a rigid economization of those fecundating substances which are too frequently neglected and turned to waste about his buildings, he would at once reform his practice, and devote a portion of his time to a department of labor which is to be regarded as the initial employment of every one who is successful in the prosecution of agriculture as an art.

Collect all Vegetable Matters.

The woodlands afford an inexhaustible supply of materials for manure, as do also the pastures, road-sides and commons. Wherever vegetable matter can be obtained, there exists the food of plants. Not a particle of matter which has once been animated with the vitalizing principle of life, is to be considered worthless. Even the *fungi*—the low mosses, and the reeds and rushes of the ravine and the swamp—are all suitable and valuable materials for the compost heap, and may be resolved into a healthy aliment for plants.

SHEEP SHEARING IN VERMONT.

About 1000 of the sheep breeders of Rutland county were present at the first annual shearing of their association at Rutland, on Wednesday, May 1st. The display of animals was very fine, and the shearing process was carried through with enthusiasm. The animal which produced the greatest weight of fleece in proportion to weight of carcass belonged to Mr. A. E. Smith, of Clarendon; live weight, 63½ lbs.; fleece 14½ lbs. Next, "Matchless," owned by Gleason & Jones, live weight 76 lbs.; fleece, 15¾ lbs. On the same day there was a shearing in Shelburne, at which prizes were awarded for the best fleeces, and 16 sheep were sheared, whose average weight of carcase was 13 lbs. 8 oz. The lightest fleece of the 15 weighed 7 lbs. 14 oz. from an animal which weighed 58 lbs.; while the largest fleece weighed 20 lbs. and 10 oz. from an animal whose weight was 120 lbs. 3 oz. One weighing 91 lbs. yielded a fleece of 15 lbs. 12½ oz.; another which weighed 97 lbs. furnished a fleece of 15 lbs. 12½ oz.; and another furnished a fleece of 10 lbs. 15½ oz. from a carcass which weighed only 56 lbs. Still another carcass weighing only 63 lbs. yielded 16 lbs. 12 oz. of wool. Premiums were awarded to Henry Thorp and H. H. Newell, Charlotte, and L. S. Drew, South Burlington.

SNAKES.—We seldom destroy snakes of any kind. There is a powerful prejudice, however, existing in the popular mind against these reptiles, though as a general thing few are more harmless. The common striped snake,

and green snake, and even the adders, are all useful to the farmer, as they feed on insects, and are thus powerfully instrumental in diminishing the innumerable hosts of insectivorous depredations which prey upon his crops.

Out of two hundred and eighty species of serpents, only thirty-two are supposed to be poisonous, and of these latter, but one,—the rattlesnake—is an inhabitant of the North. The adder,—the most repulsive of all our snakes,—is by no means noxious, and possesses neither the power to kill or harm.

HOW TO MAKE THE LAND RICH.

In New York City there is an association of a few wide-awake, inquisitive, go-ahead gentlemen, who come together in a pleasant room and discuss any and every subject that has a bearing upon the cultivation of the earth. This association is called the American Institute Farmers' Club, and its doings are reported weekly in the *Tribune*. They meet once each week, at ten o'clock in the morning, and their doors are open to all who wish to enter and listen, or take a part in the discussions. They are doing just what ought to be done,—and ought to have been commenced years ago—in the office of the Board of Agriculture in Massachusetts.

Discussing the subject of manures, recently, Mr. Peter Brown, of Limesbury, Conn., said: "The great question with farmers in this section is manure, and how to get it economically is a very important consideration; but that farmers must depend, mainly, upon the barnyards, stables and hog-pens, for cheap fertilizers, is an undeniable fact."

Some one, with more truth than courtesy, promptly replied.

No, sir, it is not. We dispute it. The cheapest manure that you or any other man can use is clover seed, even at $25 a bushel. Sow clover seed with every grain crop, even with Indian corn, and quit that worst of all practices—sowing oats upon corn stubble. Plow under a crop of clover to serve as manure for every other crop. Mix clover and timothy seed together, and if you get a good timothy sod, do not be afraid to break it up. It is equal to 160 loads of pretty good compost manure to every acre. In applying manure to your land, learn by actual experiment whether it is more profitable to spread it upon grass sod and depend upon that to make corn, than it is to put the manure in corn hills.

We greatly need examples of turning under green crops in our New England farming, and hope that many will exist before the close of the next growing season. They may be made on a small scale, and, we have no doubt, will afford more encouragement than the use of any special fertilizer has yet afforded. Try it and report results.

AMERICAN FIRE EXTINGUISHER.

A few days since, (May 9,) the invention shown in the accompanying engraving was practically tested on the Fair Grounds in this city. We were not present ourselves, at the trial, but a friend who witnessed the test, spoke of it as a wonderful success. A committee of leading business men and insurance agents testify that the experiment was perfectly successful. The fires were started in piles of tar barrels, filled with shavings and saturated with kerosene, and after being thoroughly ignited the flames were completely subdued—the fire put out—in one case, in one minute, in the second, in one minute and seven seconds. A frame building, erected for the purpose, and containing inflammable articles was fired, and when the whole building was wrapped in flames, three men, each with an extinguisher, played on the building and put out the fire *in thirty-seven seconds!* Hon. Daniel Needham of this city, is President of the Company which manufactures this machine, and will give all desired information.

BREEDS OF CATTLE.

A correspondent of the Vermont *Farmer* very concisely gives his opinions of the merits of the principal breeds of cattle:—

In view of all testimony and our own long experience, we are constrained to believe the pure Durham short-horn is the best blood to use to improve the present race of cattle in New England. The Devons are a smaller and beautiful breed. The oxen are as much alike as two peas, of a beautiful mahogany red color, with long, handsome horns, but they are too small for the Brighton market or beef. The cows give rich milk but a very small quantity. The Ayrshires are hybrids from the Durham on the one side and native cattle of Ayr on the other, and are about the size of the Devon and as hardy and better milkers. The Herefords are not fit for the dairy but have good beef and working qualities, and make sprightly, large and handsome oxen. As for the Alderney and Kerry cattle, they are not fit for a grazing region or general farm purposes.

While the Dutch are the great rivals of the Durhams in size, but not in symmetry of proportions, they will match any breed in the world at the pail; make powerful oxen, but are said not to take on fat, or mature so early as the improved Durham short horns. We should, though, prefer the Dutch, next after the Durhams, for a cross with our best cows.

AGRICULTURAL ITEMS.

—Some farmers sell two crops in the winter. In the fore part it is hay, in the latter part hides.

—In Northern Ohio sheep have wintered poorly. Fodder unusually scarce.

—A correspondent of the *Maine Farmer* thinks he has discovered the cause of smutty corn in the use of muck in composting manure.

—The death of Lois Weeden, of England, originator of the "Lois Weeden" system of husbandry, is announced.

—The *Prairie Farmer* says that Osage hedging has become the chief mode of enclosure on the prairie farms.

—So great is the demand for the Osage plant for fencing purposes, that the price has recently risen from two and a half to four dollars per thousand, in the State of Illinois.

—On a charge of destroying fruit, the city council of Madison, Ind., have passed an ordinance excluding honey bees from the limits of the corporation—guilty or not guilty.

—Radish or lettuce sowed around the hills of cucumber and other vines is said to be a protection against the stripped bug, which prefers this food to the young vines.

—Hon. Josiah Quincy who sells milk in Boston from cows kept on the soiling system, estimates the value of the manure from a cow to be equal to the value of her milk.

—In Germany sheep are washed under cover; first in water at a temperature of about 80°, and then exposed to a shower bath of about 62°, until the wool is of a snowy whiteness.

—A farmer in Iowa destroyed the grub-worms that were destroying his corn, by catching a lot of moles and putting them into the corn field. The moles may be caught by the use of cow's horns with the pith out.

—The Connecticut River Valley fair will be held at Keene on the 17th, 18th, and 19th of September next. The Cheshire Co., Agricultural Society, as a Society, will hold no fair, but will be represented in the Connecticut River Association.

—Some farmers never sharpen their hoes. Hoes for the boys, in particular, should be kept sharp at all times, by grinding or filing. They should not be left in the open air at night but should be rubbed dry and hung in a dry place.

—Mr. Kendall, formerly of the New Orleans *Picayune*, but for years a wool grower of Texas, writes to the *Rural New Yorker*: "On the 13th of March, after a warm growing spell, the worst sleet storm ever experienced in this State set in; away went the grass; the ewes had no milk, and the consequence you can easily judge. I hoped to raise 1800 lambs; but if 500 rub through, I shall be satisfied. The weather up to April 7, has continued cold, raw, and backward."

—A correspondent of the *Maine Farmer* says that on the Islands which are the home of the Jersey cows roses bloom through December in the open air, and that in New England they need blanketing as much as a fancy race horse.

—New Hampshire has three million dollars invested in horses, four and a half million in cattle, two and a half million in milch cows, two million in sheep, and six hundred and seventy-four thousand in swine.

—Mr. Nathan Mosely, of Goodground, N. J., writes to the New York Farmers' Club that he has shot at different times four king birds which he thought he caught in the very act of catching honey bees, but on examining their crop no bees were found.

—Mr. Chenery, of Belmont, Mass., claims that the Dutch cattle are much superior to any other breed for cheese making, or for the production of milk for family use, or for city markets; that they are pre-eminently adapted to meet the wants of the general farmer, combining in a great degree the desirable qualities of dairy, beef, and work cattle.

—To keep borers and other insects from fruit trees, the following wash is recommended by one who has tried it. Put into a water-tight barrel, one pail soft soap, four quarts of sulphur, four quarts air slacked lime; four quarts of wood ashes, half bushel of cow or hen manure, and water enough to fill the barrel.

—The custom of working horses immediately after being fed, and especially when long intervals elapse between hours of feeding, weakens the digestive organs and predisposes them to attacks of colic. Very cold water given when the horse's body is heated, and a sudden stoppage of perspiration, are also exciting causes of this disorder.

—A large per cent. of the lambs in Rutland Co., Vt., have died, either at birth, or when but a few days old. Some of the most experienced sheep raisers are the greatest losers, and cannot account for this unusual mortality of the lambs. The same is said to be the case in many places in Addison county.

—W. B. Merry, of Anson, writes to the *Maine Farmer* that he has sixty American Merino ewes, to which he commenced feeding one bushel of potatoes per day, one week before lambing. Forty-eight of them had fifty lambs, up to April 13th, and all were smart and doing as well as lambs dropped in May. He had not lost a lamb, and seldom had to help one to suck, notwithstanding it was quite cold at times. He had one lamb that

weighed twelve and a half pounds, dropped by a yearling ewe.

—A regulation recently adopted in relation to the market in Havana requires the daily attendance of a veterinary surgeon at the slaughter house, to inspect every animal bought to be slaughtered. In view of the late disclosures in relation to the trichinous disease, should not some measures be adopted in this country for the safety of those who use pork as a food?

—Owners of horses are indebted to the Veterinary Department of the *Prairie Farmer* for the statement that, "Strangulation of the intestines by pedunculated tumors, or hypertrophied appendices epiploicæ, is among the lesions to which the intestines are liable." Webster's Unabridged is among the premiums offered for subscribers to the MONTHLY NEW ENGLAND FARMER.

—Richard McGraw, of Livonia, Mich., gives the following as a preventive of grub in the head: Take a feed trough; put tar in it; take salt and sulphur; put it over the tar. The preparation will prevent the *Œstrus Ovis* from laying its eggs on the membrane of the nose of the sheep. It will also kill ticks, so that sheep which use it will not have a tick on them.

—A man out west got ready to plant his potatoes before the moon showed the right sign, and so one day he went very quietly into the field and did up the job in good order, being careful to finish at night before the moon got up to see what he was about. The result was he had a good crop, and now brags how nicely he "come it" over that potential orb.

—The *Prairie Farmer* has not the shadow of a doubt of the ultimate success of the beet sugar enterprise in Illinois and other Western States. About 100,000 lbs. of sugar of an excellent quality has been manufactured in Chatsworth, Ill., the past season, demonstrating that beets grown there are as rich in sugar as those produced in the best sugar districts of the Old World.

—The city of San Jose, California, is entirely out of debt, with a surplus fund of $50,000; a school fund interest of nearly $100,000; is laying out and planting with trees, &c., a splendid and spacious public square; has a "foundry" which supplies the city with water, and farmers with their implements, even to steam engines for harvesting, of which thirty were in operation last fall in the valley; a large silk factory has been commenced, and extensive preparations are being made for feeding the worms in its vicinity.

—At a late discussion of the Little Falls, N. Y., Farmers' Club, Mr. Whitman said, I wish to raise a good crop of herds grass, and do not care to sow clover. It is difficult to cure. But when I get ready to raise clover I shall do so, but that will not be until cotton cloth is cheaper. I want a hay stool standing two inches from the ground, and a hay cap. Then I can put my clover upon the stool, and cover it with the hay cap, and let it cure out. In this way the leaves are saved and good hay made.

—The Illinois Legislature at its last session passed a law providing that any person bringing into the State seed of the Canada thistle, in the packing of goods, grain or grass seeds, or otherwise, and permitting the same to be disseminated and vegetate, shall be liable to a fine of $400; and any person allowing this thistle to mature and disseminate its seed upon his lands shall be subjected to a penalty of $15.

—Horace Greeley, after visiting Vineland, N. J., at his own expense, made a speech on his return at the American Institute Farmers' Club, in which he said that "any acre of that land requires forty tons of marl, and to this should be added $100 worth of other manures." He complains that he was reported as saying that "little manure is required." The Club appears to be backing down from its endorsement of Vineland.

—The editor of the California *Farmer* had the pleasure recently of shaking the hand of an admiring visitor of California, who had the pleasant remembrance of the warm pressure of the hand of Gen. George Washington. The gentleman's name is J. Harrod, of Dutchess county, N. Y., who at the ripe age of eighty-two years, and in the enjoyment of good health, was on a visit to friends in California.

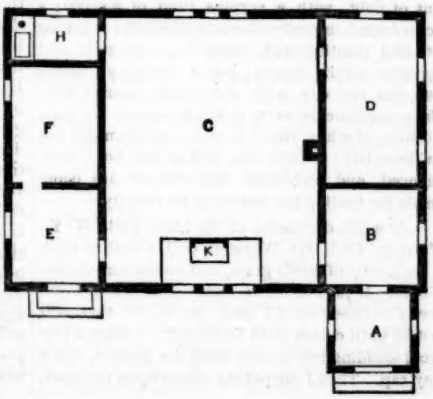
—The Iowa Falls *Sentinel* learns that provisions are getting very scarce in Hancock and Wright counties. That about one-third of the people of Hancock and Wright counties now lack seed wheat, and a few of them are already living on short rations. The unusual amount of plowing for wheat done last fall indicated an unusual harvest this season, but now for want of seed it will scarcely reach an average. And the hardship is still worse in view of the rapid immigration to that section.

MILK SICKNESS.—*The Medical and Surgical Reporter* states that the affection of cattle known as milk sickness, is caused by eating the white snake root, *Eupatorium Ageratoides*. This discovery seems to have been made by three separate observers, at about the same time. One of them Mr. William Jerry, of Edwardsville, Ill., in 1860, gathered this plant by mistake for the nettle, and ate it as boiled greens. On the day following, he was suddenly seized with violent trembling, prostration, and faintness, and on the next day with vomiting, and violent retching. He did not fully recover in five years, and in the mean time tried the plant on domestic animals with similar results. Dr. Amos Sawyer of Hillsboro, Ill., Mr. R. N. Lee of Nokomis, Dr. McPheters of St. Louis, Botanist, and Mr. Enno, chemist, all coincide in the opinion that milk sickness is caused by this hitherto unsuspected plant, which animals are said to like when it is in bloom.

A DISTRICT SCHOOL HOUSE.

Evidences of a growing taste for the pleasant and beautiful are to be seen in the architecture and surroundings of modern-built residences throughout New England. And although the bald, cheerless, and "out-of-door" aspect of many a school-house provokes the remark that "it is the worst looking building in the whole neighborhood," there is now and then one which shows that a spirit of improvement is at work which shall make these primary "agricultural colleges" attractive rather than repulsive to the Young America for whom they are provided. Indeed so great has been the change in the school house and in the system of instruction of our rural districts, that parents have found of late much less necessity for "driving" their children to school than formerly. For the purpose of aiding those neighborhoods who desire that the first impressions of the school should be pleasant to their children, we publish the accompanying plan and perspective view of a school house, designed by Geo. E. Harney, for our columns. The engravings need little description. The perspective view shows the style of the exterior. The plan shows the position and relative size of the rooms.

A is an open porch, shielding the entrance to the girls' apartment, B; C is the school room; D is a recitation room; E, the boys' entry; F, woodroom; H, wash and pump room; K, the teacher's desk.



For the New England Farmer.

FARM OF EBENEZER RICHARDSON.

Having been very much pleased by what I saw and heard during a late visit to the town of Pepperell, and especially to the farm of Ebenezer Richardson, I think the readers of the FARMER will thank me for a brief notice of this town, of this farm, and of this farmer.

Pepperell is naturally one of the most beautiful towns in Middlesex county, Mass. It is situated on the Nashua river, and on the Wocester and Nashua railroad, thirty-seven miles north-west of Boston. The surface consists of large swells, and the soil is good. Among its beautiful estates are those of the Historian Prescott, now occupied by his son, Mr. Farrar, Mr. Griffin, Mr. Belcher, Mr. George T. Bancroft, and others.

But as an illustration of practical and profitable farming,—of what may be done with our "worn out" New England farms by young men with no other means than health, industry, and an agricultural education—I propose to confine my remarks at this time to the farm of Mr. Ebenezer Richardson, which consists of some 200 acres, and which he purchased about forty years ago.

It was previously owned by Mr. David Shedd, who kept for a time about 40 head of cattle. After his death the farm was occupied by his widow, one son and two grandsons, and by poor management was run down so low as barely to yield enough to keep three cows, one yoke of oxen and a horse. Among the causes of the decline in the farming interests of this town was the introduction of the coopering business, which stripped the town of its best timber and engaged the attention of its most active citizens, especially of its young men, who seemed to prefer this business to out-door work. As this fever subsided, instead of turning their attention to agriculture the young men were disposed to seek their fortune in manufacturing, trade, &c. Mr. Richardson, however, preferred farming, and for fifteen years worked on the farm about eight months a year; going to school or teaching during the winter months, but never receiving, in either capacity, over thirteen dollars per month.

Mr. Richardson purchased the place subject to the encumbrance of the "widow's thirds," four years before he occupied the house, though he cut the hay and managed the farm with a view to its future improvement, so far as he could while working out most of these four years. On coming into full possession he began with four cows and one pair of oxen, in addition to the six head previously kept by the widow.

For the purpose of increasing his manure heap, he kept a good number of swine, and increased his stock of cattle as far as he could, until he was able to keep forty head,—the largest number he has ever owned—usually keeping about thirty, with from eight to twenty-eight swine.

He has tried the Durham, Dutch, Jersey and native, and gives the preference to the Durhams and their grades with the native stock. He has always raised his own cows; believing this the cheapest way of securing those of superior quality for his purpose, which is mainly butter making.

A peat meadow of about 24 acres has been thoroughly reclaimed. Originally it was so soft that a man would be lucky to cross it and not sink up to his waist. The grass was "cotton top," interspersed with flags, such as are used in coopering, and some cranberry vines. The quality of the mud was such that if a load of gravel was carted on in the winter, herdsgrass would spring up the next year, wherever it was spread. On draining this swamp it settled three feet. Twelve acres of it have grown up to wood; before it was drained the pines would grow to the height of a man's shoulder, and then fall down. Twelve acres have been cultivated, and year before last a portion of this produced corn at the rate of about 75 bushels to the acre. In the process of reclaiming this meadow there were on three or four acres about 40 cords to the acre of ash, pine and maple logs dug out,—some of which measured 2 ft. in diameter. The hard wood logs were much decayed. The roots, stumps and logs at the surface were completely rotten. At the depth of four feet the peat is red and hard. Among the curiosities found were perfect leaves of birch, ash and cranberry vines, and one perfect cranberry has been preserved that was found four feet from the surface.

The hay annually cut on this farm is about 70 tons and all of good quality, none being poor meadow.

There are two and a half acres of peach trees in one orchard, five years old; all of which are now in fine condition, and promise to bear abundantly. There are also six acres more set among apple trees in another orchard. All the peach trees on this farm are seedlings,—being a large yellow rare ripe, called the Pepperell peach. Nearly all the apple trees of the several fine orchards on the farm were raised from the seed by Mr. Richardson. There are cherries, pears and other small fruits and grapes.

The buildings on this farm are now comfortable and convenient, and have been built and refitted by Mr. Richardson at an expense equal to the original purchase money of the farm. He has three barns—56 by 40, 40 by 28, 40 by 30—a corn barn, apple house, and cart house, with cellars under all.

A State premium of $100; a first county premium of $25, and a second of $20, by the Middlesex Agricultural Society, have been awarded to Mr. Richardson; besides a first premium of $25 on Reclaimed Peat Meadows,

one of $20 on Apple Orchards, and several smaller ones on grain, fruit, vegetables, &c.

I obtained no statistics as to the annual income of this farm, but it was said to be much larger than that derived from most of the other farms in this neighborhood. It was remarked by an observing townsman that the clear profit realized from this farm was ten times as large as that from some carelessly managed ones in town.

Yet, notwithstanding Mr. Richardson's example the young men of the town are leaving their old homesteads, which are gradually falling into the hands of the more industrious foreign population. And even now it is said there are scarcely more than a dozen American farmers in this beautiful town who devote their whole attention to farming.

Mr. Richardson expressed regret for this growing distaste for agricultural life, and remarked that comparatively few of all his acquaintances who engaged in other pursuits had met with any marked success. W.

HOW TO MAKE GOOD BUTTER.

We copy the following judicious suggestions from the Report of G. Reynolds, chairman of the Committee on Butter, published in the Transactions of the Middlesex, Mass., Agricultural Society, for 1866:—

Whoever will take the trouble to examine the "Transactions of the Middlesex Agricultural Society" for the last ten years, must be struck by the meagre character of many of the reports of the Butter Committees. As a usual thing, beyond the mere statement of the awards, almost nothing has been hazarded either in the way of criticism or suggestion. Your present committee venture to step out of this beaten track, and to say that they do not believe that the premiums are accomplishing the amount and especially the *kind* of good which they ought to accomplish. And they are the more emboldened to do this, when they remember the great agricultural value of the article which they have under consideration. Butter, with the exception of hay and possibly live stock, is the product of the farm which in Massachusetts has the greatest money value. In this respect it is equal or superior to the corn crop, and probably worth more than the oat, barley, wheat, orchard and market-garden crop together. Judging from the past it may be assumed that the yearly product of butter in Massachusetts is from 8,000,000 to 9,000,000 lbs; worth this year at the farmer's door more than $3,000,000, or an average of about $100 to each and every farm in the State. It is evident then that anything which tends to improve the quality or increase the ease and certainty of its production is of vital importance to our farmers. Our system of agricultural premiums ought to do more than reward personal skill. It ought to acquaint us with the principles and methods which are back of that skill, and certainly it should be possible to deduce from the experience and practice of some dozen of the best dairy-women in the county definite ideas and rules about butter-making. Well, we have before us the statements of the methods of more than a dozen of such, and after a repeated and sedulous perusal of them we are unable to say whether the beautiful specimens before us came from "a pure knack" in the individuals of doing about right, or are the results of wise methods faithfully followed. The difficulty is, the requirement of the Society, as interpreted by contributors, does not bring us full and precise statements of the hows and whats and whens of butter-making, from the beginning to the end of the process. And they, above all things, are what we need most to know. Would it not be wiser to give fewer and larger premiums and demand in return more minute accounts? Or else to give an additional premium to whoever should furnish at the same time excellent butter and as excellent a story of how it came to be so good?

The character of the dairy-room and the temperature maintained in it; the number and kind of utensils used; the time which the milk is allowed to stand before skimming; how often the churning takes place; whether the cream and the churn are raised to any special and mutually equal temperature; whether cold water is used at any stage of the work, and if so, when; how much salt is put in, and how and when; whether the butter is worked with the hands, or with a wooden spoon, or with both; the manner in which the stock is kept and fed;—these and many other things, exercise, no doubt, an important influence upon the result. And it would seem as though the statements of the contributors ought to shed a great deal more light on these points than they do; and that good butter-making ought to be less an accidental peculiarity, and more a trade, with definite rules and habits which can be learned and practiced by any body. It would seem as though every good dairy-woman ought to have on these points not only correct instincts but intelligence, and that it is the work of the society to demand and to cultivate this accurate intelligence. It may, indeed, be said, that farming is not in any department an exact science. That is true. But there is no department which so nearly approaches it as that of the dairy. And though your committee, at least the chairman thereof, disclaims any profound insight into the practical details of the work, yet "he guesses" and indeed has it "impressed upon his mind" that nothing pays better in butter-making than to have precise methods and to stick to them; and he hopes that the Society will from year to year grow more and more pressingly curious in its questions until it finds out what these methods are.

As to practical lessons this year; judging

from the specimens exhibited and from the accompanying statements, your committee would say, with diffidence, that it would seem, *first*, that cream which was not allowed to stand at the most over thirty-six hours (in the summer twelve to eighteen hours in most dairy-rooms) made sweeter butter than that which stood longer; *second*, that it was better to churn twice or even three times in a week than once; *third*, that one ounce of salt to a pound of butter meets more nearly the average taste than a larger or smaller quantity; *fourth*, that the quality of the butter is much less dependent upon the character of the feed of the cow than is sometimes supposed. In respect to this last point the statements vary to this extent: "fed on grass entirely," "fed on grass and corn-stalks," "feed, besides usual pasture, a small quantity of green corn fodder and one quart meal daily," "has not had any grain since the 1st of June." Yet there is scarcely an appreciable difference in the butter made under these varying circumstances. From which we deduce the conclusion that the goodness of butter depends far more upon the care with which it is made, and very possibly upon the original butter-making quality of the cow, than upon the nature of the food.

From Harper's New Monthly.

SUGAR-MAKING.

The crocus rose from her snowy bed
As she felt the spring's caresses,
And the willow from her graceful head
Shook out her yellow tresses.

Through the crumbling walls of his icy cell
Stole the brook, a happy rover;
And he made a noise like a silver bell
In running under and over.

The earth was pushing the old dead grass
With lily hand from her bosom,
And the sweet brown buds of the sassafras
Could scarcely hide the blossoms.

And breaking nature's solitude
Came the axe strokes clearly ringing,
For the chopper was busy in the wood
Ere the early birds were singing.

All day the hardy settler, now
At his task, was toiling steady;
His fields were cleared, and his shining plow
Was set by the furrow ready.

And down in the woods, where the sun appeared
Through the naked branches breaking,
His rustic cabin has been reared
For the time of sugar-making.

And now, as about it he came and went,
Cheerfully planning and toiling,
His good child sat there, with eyes intent
On the fire and the kettles boiling.

With the beauty Nature gave as her dower,
And the artless grace she taught her,
The woods could boast no fairer flower
Than Rose, the settler's daughter.

She watched the pleasant fire a-near,
And her father coming and going,
And her thoughts were all as sweet and clear
As the drops from his pail o'erflowing.

For she scarce had dreamed of earthly ills,
And love had never found her;
She lived shut in by pleasant hills
That stood as a guard around her.

And she might have lived the self-same way
Through all the springs to follow,
But for a youth, who came one day
Across her in the hollow.

He did not look like a wicked man,
And yet, when he saw that blossom,
He said, "I will steal this Rose if I can,
And hide it in my bosom."

That he could be tired you had not guessed
Had you seen him lightly walking;
But he must have been, for he stopped to rest
So long that they fell to talking.

Alas! he was athirst, he said,
Yet he feared there was no slaking
The deep and quenchless thirst he had
For a draft beyond his taking.

Then she filled the cup and gave to him,
The settler's blushing daughter;
And he looked at her across the brim
As he slowly drank the water.

And he sighed as he put the cup away,
For lips and soul were drinking:
But what he drew from her eyes that day
Was the sweetest, to his thinking.

I do not know if her love awoke
Before his words awoke it;
If she guessed at his before he spoke,
Or not till he had spoke it.

But howsoe'er she made it known,
And howsoe'er he told her,
Each unto each the heart had shown
When the year was little older.

For oft he came her voice to hear,
And to taste of the sugar water;
And she was a settler's wife next year
Who had been a settler's daughter.

And now their days are fair and fleet
As the days of sugar weather,
While they drink the water, clear and sweet,
Of the cup of life together.

FEVERS AND FRUITS.

Let's have a little talk about orchards and gardens, as life-preservers. Many a farmer thinks he "can't fuss about a garden" with vegetables and small fruits in ample variety, hardly about an orchard, especially beyond apple trees. So he goes on to weightier matters of grain, or stock, or dairy, and eats potatoes, wheat bread, pork and salt beef, all summer long; no fine variety of vegetables, no grateful berries, no luscious peaches or juicy cherries. By October fever comes, or bowel complaints of some kind, or some congestive troubles, most likely. He is laid up, work stops a month, the doctor comes, and he "drags round" all winter, and the doctor's bill drags, too. The poor wife, meanwhile, gets dyspeptic, constipated, has fever, too, perhaps, and she "just crawls round." What's the matter? They don't know, poor souls. Would they build a hot fire in July and shut the doors? Of course not—in their rooms; but they have done just that in their poor stomach. How so? They have been eating, all summer, the heat-producing food, fit for a cold season, but not for a warm one. A Greenlander can eat candles and whale fat, because they create heat.

In January we are up toward Greenland—in climate.

A Hindoo lives on rice, juicy fruits and tropic vegetables, cooling and opening to the system. In July we move toward Hindostan, in a heat almost tropical. Diet must change, too.

Have apples, pears, cherries, &c., from the orchard, every day, of early and late kinds. Let there be plenty of good vegetables, raspberries, strawberries, &c. It takes a little time and trouble, *but it's the cheapest way to pay the doctor's bills.* And, bless your dear souls, *these things taste good!*

You study what feed is good for pigs and cattle. All right; but wife and children are of higher consequence; and it's a shame if, with all our great gifts of intellect and intuition, we do not obey the Divine Laws in our own physical being so well that the doctor shall visit the house less than the horse-doctor goes to the barn. Don't fail of vegetables, berries, and fruits. Try it, and you'll say we haven't told half the truth.—*Rural New Yorker.*

FEED FOR HORSES.—Barley for horses, I think, is about the poorest feed that can be given them. If they are doing nothing, they will fat a little on it; but it is not like that produced by corn. If they are put into work, it will soon wear off. I have been working horses and feeding them on barley, and changed to feeding them on corn; and after the second feed of corn I could see a great change in them. I could see that they felt more like work; they would straighten the traces quicker when spoken to, and they would hold out better through the day. For working horses, I should give corn; and for horses to drive on the road, I should give corn and oats mixed together. If I had not the oats, I should give the corn alone. For a working horse, four quarts twice a day would not hurt him; and by all means I should have it wet.—*Maine Farmer.*

For the New England Farmer.

NATIVE TREES AND SHRUBS

TO TAKE THE PLACE OF THOSE LOST OR DESTROYED.

We are looking for plants to make up for the loss, defacement and bare ugliness often produced by the wanton or thoughtless destruction of the trees and shrubs which grow naturally on sides of the country by-roads and lanes, when left to themselves. To the eye of taste, nothing is more beautiful than this natural border; because nothing else so well protects the road from wind, excessive sunshine and dust, and gives the impression of the highest intelligence in the laying out of these ways, and a feeling of naturalness and retiredness to a person who, for pleasure or on business, has occasion to pass along them.

This process of destruction is still going on. I have just been told that a long, winding, delightful road in a distant part of Brookline, which was formerly most attractive from the abundance of the beautiful, rare, native shrubs, that lined it on both sides, has recently been stripped of all its attractiveness by the wanton destruction of the exquisite borders. And I lately saw evidence, for a great distance along a railway, that this barbarous defacement of nature had been practiced, where it is difficult to conceive of any reason for it. Young trees,—birches, alders, oaks and pines,—and a great variety of beautiful shrubbery, have been cut down this last winter or spring, and the ground where they grew has been burnt over. Whoever did it ought to have belonged to the army of Attila the Hun.

I have spoken, very briefly, of some of the trees most suitable for the purpose of repairing this waste. Many have been entirely omitted; as a description of all,—their nature, economical uses, and the character of their beauty,—would require a volume. There are some, however, not yet mentioned, which must not be omitted. Such are the birches. Four distinct species of this handsome family belong to our woods, and may be found growing along the streams or in the forests of Middlesex; all of them of exceeding gracefulness and beauty: the fragrant Black Birch, the Yellow Birch, with its brilliant silvery bark, the Canoe Birch or true White, and the Grey Birch or smaller White. Another, the Red Birch, also a native of the county, is less known and less beautiful. All of these, though extremely delicate in appearance, are easily transplanted from the forest, are very hardy and rapid growers; and will flourish on the most sterile soils in the most exposed situations.

Of these, the common Grey Birch, or White, is best known and least valued. Many people despise it, merely because it is common. Yet in everything but size, it is so much like the common Birch of England and Scotland, that none but a botanist can point out the difference. Every where in Northern Europe that tree is celebrated for its lightness and airiness, and it is the special ornament and charm of Balmoral, the British Queen's summer residence in Scotland.

Our little Grey Birch, then, *is* very beautiful. The three others are still more so. All are remarkable for the rich colors of their tassels in spring; for the shape and brilliancy of their leaves; for the airy, delicate elegance of their often pensile spray, and for the graceful sweep and motions of the branches and the whole tree when swayed by the wind.

There are also several of the poplars and some of the willows, whose claims to the character of beauty would be readily admitted if they were European or Asiatic, and very difficult of cultivation.

I shall recommend only one tree more. This is the Wild Black Cherry Tree, which to the excellent qualities of each of the other trees, adds two of its own. It often springs up of itself, and grows everywhere readily

and rapidly. It blossoms early, and bears abundantly fruit agreeable to the taste, and furnishing the best native remedy known for autumnal diseases. Its leaves, the reddish-brown color of its branches and its shadiness, make it always a beautiful tree; and it is such a favorite with caterpillars that it attracts them from the trees of the orchard. *It does not create caterpillars*, it only draws them away from other trees, and thus very considerably lessens the labor of those who are careful to destroy the caterpillars' nests when they first appear, as the greater part of them will always be found on these wild cherry trees.

Few persons are aware of the great number and variety, and singular beauty of the shrubs, under shrubs and climbers, that grow naturally along the borders or in the openings of the primeval forests in every State of New England. There are ten or eleven whortleberry bushes,—huckleberries or blueberries,—from four inches to ten feet in height, with delicate, pearly blossoms, bright handsome, often perennial leaves, and, in most instances, some of these clothe the ground under the pine woods with delicious fruit and a carpet of rich colors. Many of these would be worth cultivating if it were only for the beauty of their flowers and foliage. For their fruit they have already been recommended.

The American Rhododendron; the two species of Azalea; the Rhodora; the three Kalmias,—the mountain Laurel, the Lamb-kill and the Glaucous,—with the Ledum, all natives of Massachusetts, constitute a family which, in beauty of flower and of foliage, does not yield to any family in the temperate zones. Most of them are known and cultivated, and are objects of admiration in the "American gardens" in Europe, as they are, in a lower degree, in this country. Nobody knows of more beautiful flowering shrubs than the Kalmias; why should they not be brought near the homes of all sensible people, who desire that their children should grow up with a taste for the beautiful in nature? The native Spireas,—Meadow Sweet and Steeple Bush—are as valuable as are any of the foreign species which are much sought for.

Seven or eight species of Viburnum,—the Hobble bush, Cranberry tree, Arrow wood, of several sorts, the Sheepberry, the Mayberry Tree, the Withe-Rod, are all native and all beautiful for their flowers and for their leaves.

It was the loss of some fine specimens of one or two of these plants which made me regret particularly the destruction of the road-side beauties on the Worcester Turnpike. I know not now where to find, growing wild, within the distance of an afternoon's drive, the Hobble bush, Viburnum Lantanoides, with its beautiful flowers, its dark crimson berries, and its exceedingly rich leaves.

Of the Cornels or Dogwood Family, much resembling the Viburnums, there are six species of delicate looking shrubs, from the Cornus Florida,—Flowering Dogwood,—making so fine a show in flower and in fruit, and often rising to more than twenty feet in height, through the Round-leaved, the Red Osier, the Panicled, the Alternate leaved, down to the delicate Silky Cornel, or Kinnikinic, and the pretty little Bunch Berry or Dwarf Cornel Berry. All these are deserving of cultivation, and, when once planted, will need little care; some of them propagating themselves rapidly by suckers.

The Roses commend themselves. We have found growing, as if wild, three of which are natives, the Early Wild Rose, flowering in May and June; the Swamp Rose, in August; the Shining Rose, remarkable for its rich, dark colored, shining leaves; and the Sweet Briar, very beautiful both in flower and in fruit, and extremely well suited to form a hedge.

But for this purpose, we have, also growing wild, besides the Buckthorn and Prickly Ash, four species of thorn,—the Cockspur, the most beautiful of all, the Scarlet-fruited, the Pear-leaved, and the Dotted-fruited, besides the Hawthorn of Europe, so extensively introduced. All these make very handsome little trees, when growing singly, and are particularly fit to be so treated. More beautiful than them all, is the Small Magnolia,—the Glauca,—which may be cultivated without difficulty. The Bladder-nut is a handsome native, striking from its leaves and curious inflated seed vessel.

The Mountain Ash is too well known to need to be mentioned. But the Shad Bush, or Wild Sugar Pear, ought to be pointed out and planted for its beauty and its fruit, as ought the Beach Plum and the Canada Plum. Three or four native species of the Sumach are conspicuous for the richness of their foliage and their fruit, and are very hardy. Two others, wonderfully beautiful, one of them a climber, must be avoided on account of their poisonous qualities.

But we have, to take their places, several plants originally, like ourselves, foreign, but now completely naturalized. Such are the Privet, the Virginia Fringe Tree and the two Lilacs, the common and the Persian.

Of native climbing plants, we have some of the most beautiful that are anywhere to be found; all of them hardy and easily grown. Among these, one of the most deserving of notice is the Roxbury Wax-work, or Staff Tree. Climbing upon a wall, a trellis, or the trunk of a tree, it has, with its opening, orange colored pods and scarlet seeds, a fine picturesque effect. The Virginia Creeper is too well known to need to be recommended. It is here and in foreign lands very extensively cultivated, and speaks for itself on the walls of most of our churches, and as an ornament to many private houses.

We do not make sufficient use of our native grape vines. They are a beautiful covering

for a stone wall or a fence; take up no room, and are of great value. Four species are found in Massachusetts, some varieties of which produce delicious fruit, and the finest of all of them may be converted into excellent jam or marmalade, a most agreeable addition to a breakfast or a dinner table.

All the plants,—trees, shrubs, undershrubs and climbers—that I have recommended, grow from seed. It is only necessary to find out the proper time to sow the seed, and the kind of protection the seed requires. This is to be discovered in every case by studying attentively, in its natural habitation, the plant in question, and finding out the season when the seed is ripe and how it sows itself,—on the bare earth, or among bushes, or under leaves, decayed or just fallen. G. B. E.

Boston, May, 1867.

For the New England Farmer.

LITTLETON, MIDDLESEX CO., MASS.

This town, situated on the Fitchburg railroad, twenty-six miles from Boston and twelve from Lowell, is of small extent in territory and contains but a little more than one thousand inhabitants. Its surface is diversified with hills and valleys, and contains some beautiful ponds. The soil is generally a rich loam, with subsoil of gravel and clay, and produces excellent crops of grass, grain and fruit.

The business of the inhabitants is almost exclusively farming; and yet, considering its extent and population, it is one of the most wealthy and flourishing towns in the State. The taxable property amounts to over six hundred thousand dollars, or about one hundred dollars to every man, woman and child. Its wealth is very evenly distributed; there being few who are worth more than ten or twelve thousand dollars, and few who have not a competency. This town expended money liberally and furnished men promptly during the war, and in six months after its close it did not owe a dollar.

There are many young farmers in this place whose public spirit and improvements are most commendable. We think the estate of J. A. HARWOOD, Esq., in the southerly part of Littleton, is one especially deserving of notice. It contains 200 acres, lying nearly in a square, and has been in possession of the Harwood family for five generations. The original proprietor, who came from England, first settled in Concord, Mass., but shortly afterwards removed here.

When the present owner came in possession of the farm, fourteen years ago, several of the fields, which now add much to the beauty of the estate, and are among the most profitable, produced very little. Just across the road which passes in front of the buildings is a fine orchard containing ten acres. Two acres of this lot nearest the road were set out, twenty years ago, by Col. Nahum Harwood, the father of the present proprietor. The other eight acres were at this time a pasture, producing very little feed; much of it was covered with brush and moss; and that part of it most conspicuous to the road and buildings, being a steep hill, considered nearly worthless for cultivation. When Mr. Harwood began to tear up this hill some of his neighbors thought he was going too fast. But the result speaks for itself. The trees are in a very thrifty condition and bear evidence of judicious management. The whole is now a profitable field, and a beautiful orchard. Separating the two acres first planted from the eight planted fourteen years ago, there is a run which was formerly very wet throughout the year. This has been drained by the present owner and produces large crops of grass of excellent quality. On the whole farm there are one thousand apple trees, some of which have been set over fifty years, and have been very profitable.

By the roadside is a fine peach orchard of six acres, containing the best early and late varieties, which are now just coming into bearing condition. The land occupied by this orchard was likewise a pasture, badly worn out, and a very uninviting field for cultivation. The change made here has added greatly to the appearance of the farm. The cultivated crops have paid for the labor, and there is every prospect that the peach trees will bring a handsome return. Mr. Harwood has full faith in the profitableness of fruit-raising, and says that he would as soon set a peach or an apple-orchard to-day as ever.

Another improvement is a reclaimed meadow of about eight acres. The mud is deep on a large part of it. Before it was drained, cattle could not go on to it. The grass was so poor that, for one or two years, the growth on about five acres was sold standing for five dollars. A portion of this has been improved yearly by Mr. Harwood, until now the last remaining part has been dressed. The method of reclaiming has been to spread on gravel enough to cover the grass thoroughly; then a coat of horse manure without plowing, or sowing any grass seed. A crop of weeds is obtained the first year, but after that good herds grass comes in; which, when ready for the mowing machine is as high as the horses' backs. Mr. Harwood says that the crop will average four tons strong to the acre, though he never cuts a second crop. This meadow is dressed every other year with a compost of horse-manure and mud. The prevailing idea, that mud is not a suitable dressing for a meadow is regarded as erroneous by Mr. Harwood.

About eight acres of corn fodder were raised last year, mostly in the apple orchards, requiring but little labor, as managed. After planting time, the land was plowed, the corn sown broadcast and harrowed in. It was cut in the last of September, bound, stooked, and left to stand from one to two months until thoroughly dried. It was then put in the barn and packed.

A little salt does not hurt it. The estimated crop, when dried, was twenty-five tons, for which Mr. H. was offered $12 per ton, at the barn. Mr. Harwood has some of this in his barn now, and his cattle consider it a luxury. He thinks that it does not exhaust the soil more than a crop of potatoes; and believes that no man who will cultivate this crop need complain that he cannot fill his barn or keep his stock for want of food.

The mansion house on this estate is a commodious building, pleasantly situated and shaded by beautiful elms. There are also two tenement houses in which the help on the farm reside and board themselves. The plan of having the employees of the farm board themselves, Mr. Harwood regards as much the best. It is cheaper for the employer and more satisfactory to the hired hands; while it greatly relieves the domestic cares and labors. He has been very fortunate in securing the assistance of good hands on his farm.

The present stock on the farm is about thirty head of horned cattle, six horses and several swine. Forty head are wintered and hay, &c., enough cut for them. Formerly the stock was thirteen cows, one pair of oxen and a horse. The barn is a fine building 100 by 40 feet, with wing 40 feet; under the barn there is a very good cellar, nine feet in depth, and box stalls in the wing. Formerly the barn was 100 by 28 feet, with no cellar. There is also good running water in the yard. Connected with the barn is a henery, 12 by 12 feet, two stories, wi h yard enclosed by a high fence. This is entirely under the care of Mr. Harwood's son, twelve years of age, who purchases the food, sells the products, and keeps an account of the expenditures and income. I learn from him that he has made $15 net profit from twelve hens (all pure Brahmas) during the last eleven months.

A great quantity of muck is used on this farm. Six hundred horse cart-loads of compost manure have been carted out from the cellar since August last.

Thoroughbred Short Horns.

Mr. Harwood makes a specialty of raising thoroughbred Short Horn cattle. He was among the pioneers in this business in this vicinity, having introduced, several years ago, the first Short Horn Bull into his native town. He considers the thoroughbred Short-Horns more docile, greater milkers, finer formed and much superior to any breed that we have. He believes the Durhams will live and thrive where the native or any other breed will.

There are several other farms in this town that I hope to have an opportunity to give you some account of. W.

May 7, 1867.

Prevention and Cure of Lice.—It is well known that cattle are not affected with lice in the summer season, when lying upon the ground, and frequently pawing in the dirt; while bulls that are always pawing in the ground and sand are very rarely troubled with the pest. This fact confirms the utility of dirt or sand. Every farmer or cattle keeper should provide an ample supply of fine sand in season to have it thoroughly dry before freezing weather, and place it in some dry and convenient spot, and whenever the stables are cleaned, sprinkle the floors with a few shovelfuls. The dry sand will work its way among the hairs of the animals, proving a certain preventive of vermin, and even driving them away, or destroying them after they have made lodgment. Sand will also be valuable for absorbing the liquid, and a safeguard against slippery floors. We have tried sand, and know its efficacy. When cattle are badly afflicted, it may be sometimes necessary for their speedy removal, to wash the animal with a decoction of tobacco (not too strong) boiled in chamber ley; or by applying lard upon the affected parts. Unguentum, and like violent poisons, are dangerous, and should be avoided; but usually will effect a cure. It may be necessary sometimes to sprinkle a little dry sand along the back of the animal. Sand is cheap and safe. Try it.—*Horace Thayer, in American Farmer.*

Rules for Selling Wool.—At the late Fair at Auburn, N. Y., one evening was devoted to the discussion of the proper preparation and rules for selling wool. The leading sheep breeders of Vermont and of New York were present. Resolutions were adopted, expressing a preference for the plan of disposing of wool in the unwashed state, but leaving wool growers to consult their own convenience as to washing; against all uniform and arbitrary rules of deduction; against combinations of buyers, and in favor of a just discrimination in favor of superior quality and condition, on the part of buyers.

Cows and Sheep.—These animals should never be pastured together. As the latter are astir early in the morning, they generally succeed in appeasing their appetite before the cows that occupy the pasture with them during the daytime are admitted, and usually destroy much more herbage than they consume. No animal will partake of grass upon which a sheep has lain, or even trod; there is a peculiar *aroma* characteristic of these animals which is offensive to cattle. It is far better to pasture every description of animal by itself, than to put them promiscuously together, as is frequently done.

THE GLOUT MORCEAU PEAR.

(Pronounced *Gloo-mor-so.*)

The above cut is a remarkably exact representation, as to size, form and general appearance, of one of the specimens of this favorite pear, which were exhibited at the Cambridge Fruit Preserving House, May 20th, and which we have kept in our desk till to-day, May 25, as advised by Mr. Hovey, to "ripen up." On testing it we find it quite fresh, juicy, and not at all "bad to take." A December pear hardly ripe enough for the table in the latter part of the succeeding May, is one of the wonderful results of science applied to the practical management of farm and garden products.

The Glout Morceau is universally admitted to be one of the most delicious of foreign winter pears; being hardy and productive. The tree is spreading and declining in habit, having dark olive shoots, with wavy leaves. The fruit is in perfection in December, or first of January. Mr. Downing describes the fruit as "rather large, varying in form, but usually obtuse-oval, and wider towards the stalk than Beurre d'Aremberg. Skin smooth, thin, pale, greenish-yellow, marked with small green dots, and sometimes with thin patches of greenish-brown. Stalk rather slender and straight, an inch or more long, planted in a small, regular cavity. Calyx usually with open divisions, set in a moderate deep basin. Flesh white, fine-grained, and smooth in texture, buttery, very melting, with a rich sugary flavor, with no admixture of acid. December."

EXTRACTS AND REPLIES.

SPECIAL MANURES.

If you will accept of the scribblings of a man of four-score and three years old, and consequently one of the past generation, I will give some of my experience and observation in different manures.

As to yard manures—the great staple—I find that some of the present generation have made great improvements, by the use of barn cellars and composting, while others lose all of one-half in the swamps and the air. I am of the opinion that it is better to put green manure into the ground than on it.

Having been a manufacturer of ivory, I have frequently used its dust during the past sixty years. It is equal to bone dust or superphosphate. Castor pomace, I find, is a strong, quick and excellent manure for a present crop. As to bone dust, I have used it frequently for thirty years. It is an excellent and lasting manure, if rightly managed, and if it contains the original matter of the bone. Bone is nearly half lime, the rest gelatine or an oily, gummy matter, producing ammonia, which is indispensable for the dissolving of the bone. If the gelatine and ammonia are extracted, the rest is no better than oyster shells, and must be treated in the same way. I consider phosphating or powdering needless. I have never found any difficulcuilty in dissolving bones ground in the common way, if the original matter is in them. I pour them down in a heap, with or without anything with them, in the hot sun, wet them thoroughly, and then cover them with loam or earth two or more inches thick, and let them heat, but not to a dry heat. The whole pile will become a rich manure. I then mix all together and plow or harrow them in. Judge Buel, who in his day was one of most skilful and successful farmers in the State of New York, said in his *Albany Cultivator* that he wanted the coarse part of ground bone no finer than half inch pieces. The fine part would take immediate effect, while the coarse would retain and continue to give out fertility for years. I have found it so myself. Bones, when whole, have a scale on the outside which protects them from decay; but when broken in pieces are excellent for young trees. How such bone flour as will not ferment will answer for diseased cows I cannot say. I have a better remedy; one that I have tried. It improves the flesh, the bone, the milk, the butter, the hair, and saves considerable hay. It is merely to feed them all the spare skim milk, thickened with bran (not grains from the stills,) or the meal from corn and oats; all of which contain bone timber. It is as natural for cattle to gnaw bones and other things, as it is for a horse to gnaw a post that he stands by, or for a man to be gnawing tobacco. A bushel of ashes on our old worn out lands, I find will do as much good as the same quantity of bone dust or superphosphate, but I want something besides ashes in the soil.

Some fifty years ago I bought a tract of land, of which four acres was sown with rye the previous year. The former owner took off only two bushels to the acre! I put on 400 bushels leached ashes, costing twelve dollars per acre, sowed it again with rye and clover in November. The next July I harvested twelve bushels per acre—not a large crop to be sure, but six times as much as the year before. The next year I had a fine crop of clover hay. The third, with some yard manure, a good crop of corn. I could long see the good effects of those ashes.

I should delight to hear the opinion of some of your scientific men as to the use of ammonia in manure and in the soil. Is it not the Frenchman's yeast? the New Jerseyman's secret? or the one thing indispensable to prepare manure and other matter for the food of plants? Does it not penetrate the earth like water, and cause the roots of plants to penetrate to the place from whence it came? Neither bone nor plaster of Paris does any good here spread on grass land, but both are good in compost.

If bone dust does not smell strong of bone; if plaster of Paris, when put in water settles to the bottom; if ashes change the color of water; if lime bites the tongue, or if ground oyster shells settle to the bottom, I reject them. I consider myself responsible for what I write and give my name.

Deep River, Ct., 1867. PHINEAS PRATT.

DRESSING LAND WITH CLAY.

It is very seldom I see anything in your columns relative to the use of clay as a dressing for various soils. Having had some experience during the past half dozen years, I would say that I consider it valuable on all soils, except those which are very wet and heavy, or those that already contain enough of the article. To those who can get it by drawing not more than half a mile, I would say, procure a few loads and note the results for two, three and four years after the application.

As the best method of applying clay, I recommend to draw it in the fall and drop it in heaps, as you would manure, the more the better. By the action of frost through the winter it is pulverized so as to be easily spread. Or if drawn in the spring or summer, the sun and rains for a few months will produce nearly the same effect. In either case, spread and harrow well.

If this meets the eye of any one who has had any experience in this direction, I would be happy to hear of that experience through the columns of the FARMER, as I understand the "exchange of ideas," &c., to be a leading object of an agricultural paper. He who keeps his experience to himself violates the spirit of the injunction to "Do unto others as ye would that they should do to you." Still it is almost impossible for us, uneducated farmers, who work so hard six days in every seven, to do our duty to each other by communicating the results of our practice, by our ungrammatical, laborious and unsatisfactory style of writing. F. A. C. N.

Plymouth, N. H., Feb. 11, 1867.

DISEASE AMONG LAMBS.

We have experienced in this vicinity for the last twenty years or more, at times, among our best shepherds, and also among ordinary shepherds, great difficulty in raising our young lambs. Twenty years ago the present season I had a select flock of thirty ewes that I had collected from such flocks as those of Caleb Dyer of Enfield, N. H., Hon. Wm. Jarvis of Weathersfield, Gibbs Wait of Windsor, Alford Hall of Wallingford and Maj. North of Shoreham, Vt., all blood sheep.

The second season after I purchased them, they were sheltered in a temporary shed, fed at all times in the open air, in rain, snow or sunshine, had a plenty of room for exercise, were in good condition, but not excessively fat. They dropped their lambs in the month of April, some had large bunches in their throats, could hardly stand or breathe, would live a day or two and die. Others were dropped with large fleshy bodies, and their limbs not half matured; were as destitute of strength as a rag, and all such died soon. Out of the thirty ewes I kept nine lambs alive, but proved worthless in the end. I had other flocks of ewes at other barns that experienced none of the difficulties above mentioned. I am told that several shepherds in Addison county are visited with the same calamity this spring. And now, Mr. Editor, and brother shepherds, what is the cause of it?

I have seen enough of its workings among different flocks, and the flocks so variously treated, that I am satisfied that housing, feeding and petting has nothing to do in causing this difficulty. Here is a question for the learned and scientific to meditate upon. What is it that causes this disarangement in the natural production of the ewe, and not in other female animals? Brother shepherds, that have experienced losses of this kind, please communicate your ideas to the public, and perhaps you will spare me the trouble of writing again. J. N. SMITH.

Oak Forest, West Addison, Vt., May 7, 1867.

REMARKS.—We warmly sympathize with brother Smith in his trials. Have had no experience in raising full blood merinos, but have had no similar difficulty with high grades. The subject you introduce is important and we trust will be well-considered and light thrown upon it by breeders.

With Mr. Smith's letter, came two samples of wool; one from a full blood Leicester buck, not yet shorn, who is one year old. The wool is eight and one-half inches long, soft and silky. The other is from a merino buck, three years old, the growth of one year, and from a fleece which weighed twenty-two lbs. It is three inches long, and has a beautiful curl.

TROUBLE WITH COWS AFTER CALVING.

Many cows are rendered nearly worthless by not cleaning well. This they seldom fail to do when at pasture. My practice, therefore, is to feed potatoes, and as much salt as they will eat for three or four weeks before calving, when they are kept up to dry fodder. I also apply some of the first milk to the small of their backs, well rubbed down. With these precautions I seldom have a cow fail to do well. V. M. HUBBARD.

Rochester, Vt., May 12, 1867.

REMARKS.—Another correspondent, "M. Q.," of Warwick, Mass., writes that although some of his neighbors have been much troubled in this way, he has never had a cow that did not do well, nor does he remember that his father ever had one. A neighbor of his who fed a good deal of poor meadow hay but no roots, had eight cows one spring which had to be doctored, and all of them were found to be very costive, and feverish with chills. The members of the Irasburg, Vt., Farmers' Club, and other readers of the FARMER will thank our correspondent for the following detail of the management of his dairy:—

I have been in the habit of feeding oat, barley, and wheat straw to cows when dry, with one peck of turnips or beets daily, which keeps them in a healthy condition. About three weeks before calving I give them good hay with one quart of oat and corn meal, daily. At the time of calving I give them warm mush of oat and rye meal with half an ounce of saltpetre, one teaspoonful cayenne, and my cows never have any chills or milk fever, which are so common.

CURCULIO.

Is there any way to stop the most fatal depredations of these insects? They have become so numerous, that I seriously contemplate cutting down my orchard unless some remedy can be found. I believe there is no hope of his leaving our orchards, like the canker worm, and most other insects, even for a short period. They have been steadily increasing in my orchard for twenty years, till not one apple escapes their sting, and I have seen a dozen marks on a single fruit. I shall try the sawdust this year and keep off all the creeping things, but as the curculio can readily fly, I have but little hope of success. Who can tell how to stop or destroy the curculio in any way or manner possible? THOMAS ELLIS.

Rochester, Mass. Feb. 25, 1867.

REMARKS.—Catching them by jarring upon a sheet and grinding them to powder between the fingers, we believe is the best prescription within the knowledge of our scientific educators. Notwithstanding the wide scope of the investigations of our entomologists we are still wofully ignorant of the tactics of this band of guerrillas. Who will track them to their winter quarters? Perhaps they may be caught napping. Wide awake, they are hard customers.

KEEPING OFF THE CROWS.

One or two articles have appeared in the FARMER within the past year commending very highly the tarring of seed corn, in which opinion we should have fully concurred from the occasional use we have made of it previous to the last season.

We planted a three acre lot in an out of the way place, a favorite haunt of these black pests, and thinking to make about a sure thing of it had the seed tarred before planting. We expected the crows would try the corn, but were disappointed to find that the black varmints did not leave off trying it. Some one also recommended deep covering. Now as if to have revenge on us for spoiling the corn for their eating, these scamps went through a large part of the field occasionally boring down with their bills, as they are wont to do, but in most cases only pulling up the young blades of corn. We replanted the lot after being thus badly damaged, and used lines, which the crows, though very numerous, seemed to respect. We have used lines many years as a protection, and always so far with success. Though we should scarcely credit the fact, if we had not proved it by experiment. R.

Stoughton, Mass., May, 1867.

RAISING LAMBS.

I wrote to the FARMER last year, in relation to my poor luck in raising lambs, and promised to do the same this year. Last year, and two years ago, I used the same buck, and lost one half or more of my lambs. The first year I fed no grain; the second year I fed grain, and my ewes had milk enough and owned their lambs well. This year I used a different buck. My sheep look well, and now I have forty-five lambs and have lost six. I thought my better success was in consequence of the change of the buck, but some of my neighbors ascribed it to one thing, and some to another. The man who is raising lambs from the buck that I used the two first years, is having even better success than I am. I would like to know where the fault was last year.

What is it that ails lambs that appear lame in their legs, or back, and finally all over, and in two days time get so they cannot get up? The largest and fattest ones in the flock are thus affected.

Roxbury, Vt., May 11, 1867. YOUNG FARMER.

DWARF APPLE TREES.

Some fifteen years ago I became convinced that grafting upon the natural branch was very injurious to the stock, as the heart becomes dead, and

consequently short-lived. I then commenced a new mode of culture by taking trees of two or three years' growth and grafting at the root. Cut off the trunk about an inch from the root and when the scion becomes well started cover with loam and composted manure just above the cleft. The small roots will soon start from the scion and you have a perfect tree of the kind grafted. If you wish to train it as a dwarf, cut back so as to keep the tree well balanced. In this way I have trained some as handsome trees as I ever saw, which prove good bearers with handsome tops, and trunks from two to three feet high. G. L. HIBBARD.

West Randolph, Vt., May, 1867.

COCKS AND HENS—KEEPING EGGS.

Will you or some of your correspondents inform me whether one cock is sufficient for fifty hens? How long can eggs be kept safely before setting?

I have kept fifty hens (Brahmas) during the past winter. They have averaged from twenty-four to twenty-five eggs per day. As the warm weather comes on the yield will be increased. It has cost $4.00 per month to keep the fifty hens. During the past two months I have sold 125 dozen eggs at twenty-eight to thirty cts. per dozen.

Although young, I have faith in Mother Earth, and believe she will richly reward those who earnestly and sensibly seek her favor.

SUBSCRIBER.

North Thetford, Vt., 1867.

REMARKS.—It is generally supposed that there should be one cock to twelve or fifteen hens. Eggs will keep almost any length of time if they are set on end, in an auger hole, and changed once in six or seven days. We have known them to kept perfectly sound for an entire year in this way.

MAPLE SUGAR AND GRIT.

In reply to your correspondent, "G. M. B.," of Worcester, Vt., whose remarks and inquiries in reference to the grit in maple sugar, were published in the FARMER of the 18th inst., I would state, that several years ago, some of this gritty matter, precipitated from concentrated maple syrup, was submitted to Dr. Chester Dewey, then Professor of Chemistry in the Medical College, at Woodstock, Vt., and was found to be, mainly, phosphate of lime.

Whether the potash, sulphur, and other mineral matter, as well as the phosphates, composing the ash of maple wood, are also present in the saccharine sap, in like proportions; or why the phosphates alone are precipitated from the molasses or concentrated syrup, are questions for the analytical chemist. Evidently all the ash or mineral matter of the wood, (excepting, of course, the large proportion of carbon and the small quantity of ammonia, absorbed from the atmosphere,) is derived from the earth. Not the sugary fluid, but only water, and such minerals as water holds in solution, are absorbed by the roots of the maple; while the true sap, containing at first sugar, and at length producing woody fibre, is elaborated by the leaves and other organs of the tree during the year previous to that in which it is drawn from the alburnum or sap-wood by the sugar maker.

In regard to the circulation of the sap, we are sometimes told that it is analogous to the circulation of the blood in animals; that it ascends in the alburnum and descends between the bark and wood. This statement, in some sense true, is, as an explanation, meagre and defective, and leads to erroneous conclusions. There are no tubes or channels in trees analogous to the arteries and veins of animals, but the vegetable fluids pass from one cell to another which is in contact vertically and horizontally; the fluids of different densities of any two cells in contact passing through the porous partitions simultaneously in opposite directions, and commingling in obedience to a law well understood by chemists and physiologists, and which they call *osmose*. According to this theory it is easily understood why the true and denser sap, as well as the weak mineral solution taken up by the roots, is found in the alburnum, and not exclusively between the bark and the wood. Only a slight mechanical circulation takes place in the duramen or heart-wood, it having ceased to perform vegetable functions.

It may be proper to remark that while pure sugar requires only water, or its two elements, and carbon for its formation, the mineral matters found in the sap and sugar, and destined to become ashes in the maple wood, are invariably present, with varying proportions, in the formation of all wood, and are essential, even if they do not enter into such formation as constituent elements, as they do in the formation of other vegetable productions. I. B. HARTWELL.

Wilksonville, Mass., May 20, 1867.

RAISING POTATOES.—WEEDS.

I am greatly obliged to brother "Ned" for informing yourself and others that his method of raising potatoes differs from mine. It is just as I expected. Experience brings wisdom, and I am very glad if he is wiser than his father was. It would not be strange if there were still other methods just as good as his or mine. In regard to planting on stubble, I will say, I have never suffered from wire worms, but came very near having a crop of corn ruined by cut worms on what he terms "sward." We may learn from this that though we are both located in one county, we have to contend with different enemies. But my object in noticing his article is, to suggest that if I wanted a few roots to feed so many cattle and horses, I would, after my land was as nicely prepared as his is for California potatoes, sow an acre or two to carrots, with the expectation of harvesting twenty-five or thirty hundred bushels, and sow the rest with oats or wheat.

One word about weeds, and I am done. He says, the more manure the more weeds. This is not necessarily the case. It is true, weeds or anything else, will grow better on rich land than on poor. It is also too often true that such well-rotted manure as he speaks of harrowing in, is filled with seeds of weeds that grew on it while it was rotting about the barn. Now I venture the assertion that if he, or any one, will wage a war of extermination against every variety of weeds, in all places on the farm, for ten years, he will find them scarce at the end of that time. W. I. SIMONDS.

Roxbury, Vt., May 20, 1867.

POTATO RAISING—AMOUNT OF SEED.

I am pleased to note that opinion and practice are nearly settled, that potatoes yield most when planted from butt-ends, and no more than four stalks in a hill; the hills two feet one way, and wide enough for a cultivator the other. My father and myself have raised on this farm, in forty years, forty thousand bushels of potatoes,—a yield of seven hundred bushels per acre being not uncommon during the first ten years. We found out that we were using too much seed in the following way. My brother and myself, when we were boys, were left one afternoon to finish planting. Finding that we had not seed enough to finish, without going to the house for more, we concluded to "extend" what we had. So we cut up what we had in the field twice as fine as usual, and finished

out with about half the accustomed amount, and kept our own counsels. When we approached this part of the field at harvest, my brother and myself supposed the yield would be in proportion to the seed. When the potatoes were laid out to the sun to dry, by the side of those from the other rows, my father's eyes stared about in wonder at seeing a much larger and finer yield here, than elsewhere. Our confession disclosed a double secret,—the special fact, and what we regarded ever after as the general law as to this vegetable.

By the way, I planted a single peach blow from Buffalo, N. Y., last year, and raised eighty—only three large enough to cook. The vines grew to the length of twelve feet, and were there stopped by a frost.

The old Carters, in their prime, were the heaviest and most nutritious for man or beast that we have ever raised. C. N. ANDRUS.

Chelsea, Vt., May 20, 1867.

TROUBLE WITH COWS.

I had a cow that did not clean after calving,—she lost her appetite, and in a short time she got so weak she could not get up. After trying various things, I took a tablespoonful of rosin, pounded fine, and mixing it with a little rye dough, formed it into a ball or pill. I made three such, and put them down her throat with my hand; the next day, as many more. The following day she was on her feet, with quite a good appetite. After regaining her flesh, she did as well that season as usual. Give a cow what oats she will eat; it is about a sure cure. A SUBSCRIBER.

Swanzey, N. H., May 21, 1867.

REMARKS.—A Maine correspondent thinks the majority of the Irasburg Club were correct in the idea of the importance of the cows being in a thrifty condition at the time of calving. He feeds meal for three weeks, and has no trouble.

KILLING BUSHES.

Salt won't do it. Something might be done in the way of reducing them by mowing them off in "the old of the moon in August." We say this at the risk, perhaps, of appearing extremely stupid, as some of our agricultural editors know the moon has nothing to with the weather nor anything else in particular;—one of whom once proved the fact to a demonstration, by citing its great distance from the earth. We have tried cutting, as here recommended—and without troubling to inquire whether the crescent had or had not anything to do with it; we believe it to be the best time to cut bushes. If not too large, gather them with a stout rake into piles for the barn-yard and hog-house. You will find no trouble in working them in the spring. They are worth much more than the cost of cutting and gathering. After this, where there is not too many stones, a field is easily subdued with a plow and four cattle. Sow to rye, or plant with potatoes. R.

Stoughton, Mass., May, 1867.

APPLE TREE BORERS.

Will you please remind your readers of the method recommended by you last year to protect trees from the attacks of the borer, viz: heap up earth around the trunks to the height of about a foot, any time before the first of July, and let it remain until after the fly has ceased to work in August. When the hurry of hay time is over, brush away the earth. If the borer fly has laid any eggs or if any eggs are hatched, they can be readily seen and removed from the bark without the least injury to the tree. This process will not take over five minutes' time to a tree; and, by preventing the borers from entering so low that they cannot be found, will afford a certain protection.

Ashby, Mass., May 18, 1867. A SUBSCRIBER.

CABBAGE AND CUT-WORMS.

A very simple process recommended in your paper last year, for the protection of cabbage plants after they are set out, has done so much good among those of my acquaintance who have practiced it, and there are yet so many more who either do not read the FARMER or have overlooked this remedy, and still suffer by the destruction of their plants by cut-worms, that I think it would be a public benefit if you would insert it again. It is simply to wrap a piece of paper or bark around the stem when it is set out.

Boxboro', Mass., May, 1867. A SUBSCRIBER.

RAISING CRANBERRIES IN NEW HAMPSHIRE.

I see in your last paper the inquiry, whether cranberries can be raised in Cheshire County, successfully, and your reply that flowage is necessary. Six years ago Mr. Nathaniel Narramore, of this village, fenced a part of the side of a road near his house, by setting some posts about three feet high and putting on one rail on the top. The land so fenced is five rods and nine links long, and nine and a half links wide. He set this out to cranberries, which he got in his wheelbarrow from beside a pond about a mile off. He then covered them with waste tan bark, about three inches deep, and on the third year he picked three and a half bushels of cranberries from the lot, and has picked from three to four bushels each year since. I think the appearance of the road is improved by substituting the cranberry patch for the bushes usually allowed to grow in such places, and certainly the profit from labor spent on it, is more than farmers usually realize in this town. The same gentleman has about two acres of land about his house from which he sells more in value than many of our farmers get from twenty-five.

DANIEL R. SPAULDING.

Richmond, N. H., May 20, 1867.

BUGS ON APPLE BUDS.

Some days since we received a letter enclosing a twig of an apple tree, the buds of which were nearly covered by a small bug. We put the letter in our pocket for the purpose of consulting our Natural History adviser, and lost it. We could not well satisfy ourselves from an observation with the naked eye, but we think they are the Aphis, of which a correspondent furnishes some account in another column. Still it may be a new pest. We find in the Iowa *Homestead* the following notice of an insect that was lately discovered on the blossom buds of apple trees in Des Moines and other places in Iowa:—

We have a new pest for the apple trees this spring; blossom buds are overspread with black lice. They are smaller than the hen louse, but what their mission is no one seems to know, and time will have to solve the question. A microscopic examination makes them about the size of a common house-fly, and about the same shape. The bark of the branches is overspread with what appears to the unaided eye, a fuzzy, dark brown net-work, holding in its meshes innumerable black specks, which, on examination under the glass, are found to be the abode of the unhatched insect. To the casual observer, this covering of the bark

would scarcely be noticed. We have never seen the like before. We would advise dusting the trees with wood ashes when wet with rain or dew. We propose to keep an eye on this new visitor and see what comes of it.

TO PREVENT BEE-ROBBING.

Can you or any of your subscribers inform me the best method to protect bees from being robbed, and to stop it when commenced. My neighbors' bees commenced robbing mine last fall; and before I discovered it they had totally destroyed three swarms. I then stopped up my hives, which proved the means of smothering three more swarms. By these means my number was reduced to one-half of what I intended to winter.

I winter my bees in my cellar, which is a very dry one, and my hives come out nearly as heavy as when put in. I never lose any, nor have the comb get mouldy. H. T. BERRY.

South Bombay, N. Y., May 10, 1867.

REMARKS.—Bees are sometimes excited to robbery by careless feeding, or by exposing a dish or a comb of honey; but generally they resort to this means of supplying their storehouses by their inability of finding flowers in early spring or late fall—often at the close of the buckwheat season. On discovering signs of robbery, it is usual to reduce the entrances to the hives, that the occupants may more readily defend their premises and property. Mr. Quimby says, "A great many remedies for this evil have been recommended, which are as bad as the evil itself, and often the cause of it. The most fatal is to move the hive a few rods; another, to entirely close it, which may smother the bees. I would recommend removing the weak hive, on the morning after the attack, to the cellar, or some dark, cool place, until two or three warm days have passed, and the search has been abandoned. When a hive has been removed, if the one on the next stand is weak, it is better to take that in also, to be returned as soon as the robbers will allow it. If a second attack is made, put them in again, or if practicable, remove them a mile or two, out of their knowledge of country; they would then lose no time from labor. Another method is, when you are *sure* a stock is being robbed, to close the hive at a time when there are as many plunderers inside as possible, (wire-cloth, or something that will admit air, and confine the bees, is necessary,) and carry in as before directed, for two or three days, when they may be set out again. The strange bees thus enclosed will join the weak family, and will be as eager to defend what is now *their* treasure, as they were before to carry it off."

PRUNING APPLE TREES.

A correspondent who signs "Down in Maine," inquires, when is the best time to trim apple trees, spring or fall; and if spring, is it too late?

REMARKS.—Any time when the tree is not growing vigorously. The *best* time in the year is undoubtedly the middle of June. The tree has then got through what is called "the first growth," the thin sap has been elaborated into a thick, gummy substance, and is returning down the outside of the branches and stem of the tree to increase their diameter. If the tree is cut when this is the case sap will not flow out in ten cases in a thousand. When the tree commences growing again, the edges of the wound will soon be surrounded by a healthy rim of green bark, which will cover the cut place entirely in two years, if it is not more than a half inch to one inch across it.

There are some disadvantages in pruning in June, such as much work to be done, and crops covering the ground. The autumn, soon after the leaves have fallen from the trees, is also a proper time to prune apple trees.

HORSE HOE.—BOILER.—OX SCRAPER.

I have bought three useful articles the past year, and am so well pleased that I regret that I did so long without them.

Your advertisement and endorsement of "*Nourse's Horse Hoe*" led me to send for one last June. It is all that can be asked for, and will soon pay for itself, if kept going. I would not part with mine for a good sum, if I could not get another.

My next purchase was a *Mott's Agricultural Boiler*. I cook food for my swine right by their pens, and plague the "folks in the house" no more, by using the house boiler and spilling swill on the floor. At this time my Mott boiler is filled with coal tar and slate flour, ready to be put on a roof to-morrow.

My last purchase is a *cast-iron ox or horse scraper*. It works first rate. I have dug a cellar with it. I use it several times a week. It is handy to level a rough spot or ridge of land. It will speedily gather the remnants of manure in the yard into a snug heap, and move into it fresh material near. My labor is more effective for these additions to my tools. WM. D. BROWN.

Concord, Mass., May 22, 1867.

TRANSPLANTING EVERGREENS.

What is the best time for transplanting evergreens, cedar, balsam, spruce, &c.? G. H. T.

Ascutneyville, Vt., 1867.

REMARKS.—June is considered a good time, just as a new growth is starting on the tips of the branches. Great care should be used to keep the surface of the ground around the stem of the tree attached to the roots, and not allow the sun or wind to strike them. The roots of evergreens are succulent and tender, and are easily wilted by exposure to sun and wind. Cover the roots with matting or earth, as they are placed in the wagon to be hauled away.

A SICK SHEEP.

Please inform me what is the matter with a valuable sheep that I have. About the time that I turned her to pasture, her head commenced swelling. In the day time her head swells and in the night it goes down; the swelling begins on her under jaw; she appears well, and eats well. If you can inform me through the FARMER what is the matter with her, and what to do for her, you will greatly oblige a subscriber. H. G. W.

Enfield, May, 1867.

REMARKS.—"Swelled head" is not uncommon among sheep, we believe, but rarely, if ever, assumes the epidemic form. Dr. Randall does not prescribe for it as a distinct disease, but thinks it

one form of *catarrh*. You would do well to separate the affected animal from the flock, and consult the Doctor's book on Sheep Husbandry for a mode of treatment.

HEALTHY LAMBS.

I have thirty-one blood lambs, dropped since the first of February, all smart and healthy. I feed my ewes roots every day through the winter, and a feed of straw every week. I keep salt by them, and part of the time I mix ashes with it. I give them a little hemlock once a month through the winter, and a plenty of exercise in the open air. I think that the great secret of success is to keep the ewes healthy. V. M. H.

Rochester, Vt., May 24, 1867.

REMARKS.—We regret that the 26½ lbs. which the fleece of Mr. Hubbard's ram "Romeo" weighed, was printed 21½ lbs. The figure 6 was imperfectly made and mistaken for 1.

A YEARLING BULL.—CROPS, &C.

Wm. T. Fiske, of Webster, N. H., has a grade bull that weighed when 13 months and 5 days old, 938 lbs. after he was driven three miles to the scales. The calf was weaned from the cow when less than one week old, and was fed three times a day with what milk the cow gave, after being skimmed, with shorts and green feed, and kept in the barn. As yet but little corn has been planted in this vicinity. Hay is very scarce, and more than was raised last year will be necessary to carry present stock through next winter. In consequence of the high price of flour, there has been more wheat sown in this town this year than usual.

Mast Yard, N. H., May 23, 1867. F.

GRAFTING WAX.

In your valuable paper of May 11, the public are cautioned by a Mr. "C." against using an advertised article, called grafting wax, stating that it kills the bark and permanently injures the tree. We would respectfully request him to inform the public, if he can, of what it is composed, so that it may be avoided. The grafting wax used in this region, for the last fifty years, with good success, is composed of four parts rosin, two parts beeswax, and one of tallow. This is of a very different nature from that which Mr. "C." warns us against, because it is of a very healing nature, when closely and properly applied, and never injures a tree.

JOHN KING.

Eagle Bridge, N. Y., May 16, 1867.

TO PREVENT BIRDS PULLING CORN.

Take a quantity of corn, soak it until it becomes soft, then string it on horse hair or thread, one kernel to each thread or hair. When your corn is coming up throw this on your field. The birds will pick it up and swallow the corn. The thread or hair will stick in their throats, and in trying to get it out, they will scratch out their eyes. Be careful that your hens do not get at it.

Chepachet, R. I., May 11, 1867. H. ROUNDS.

THOUGHTS ON FENCING.

Having been a reader of the FARMER for twelve years, I have seen much on the subject of fencing, and would suggest the following plan. On the line of the proposed fence set maple trees about twenty five feet apart, or standard pear trees fifteen feet. Then drive or screw good staples into the trees, and stretch your wires from tree to tree. If you wish for a hedge, set out your thorn, cedar, arbor vitæ, rose, blackberry, raspberry, or grape vines, and you will have not only a fence, but an ornamental, fruitful and flowery hedge.

April 22, 1867. O. H. P.

REMARKS.—If friend "O. H. P." will report a fair trial of his plan, we will promise not to prune his communication quite as severely as we have in this case.

GRIT IN MAPLE SUGAR.

I notice in the FARMER of May 18, an inquiry from "G. M. B.," of Worcester, Vt., as to the cause of grit in maple sugar. If he will strain his syrup (warm) through a flannel strainer, he will find all the grit left in the strainer. What this grit is I do not know, but if washed it becomes as white as chalk. W. H. LYON.

North Craftsbury, Vt., May 22, 1867.

SHOEING SHEEP.

Can you, or any of your correspondents, give me a plain, easy mode of fastening small pieces of wood on the bottom of sheep's feet? One of my neighbors once saw some sheep feeding in a pasture, with little paddles of wood fastened to the bottoms of their feet, but don't remember how they were fastened on. With such shoes as he describes they can't jump or climb a wall.

MANDAVILLE CAMPBELL.

North Turner, Me., 1867.

REMARKS.—We cannot, but some of our correspondents probably can, and undoubtedly will.

PROLIFIC SHEEP.—TWIN GOSLINS.

Mr. Daniel B. Smith of this town has seven sheep that dropped fourteen lambs, and one that dropped three. Another neighbor, Mr. W. H. Burleigh, has a sheep that dropped four ram lambs. From the gosling egg noticed in the FARMER, May 4, as weighing ten ounces, two goslings have been hatched, both of which are doing well.

CHARLES C. TINKHAM.

Grafton, N. H., May 20, 1867.

SOAP-SUDS.

The value of soap-suds is known to every gardener, but the supply is not always equal to the demand. Cannot a composition or soap be made of cheap materials, which, when mixed with water, will be profitable and useful for all the purposes for which suds are now used? Why does plaster kill strawberries, as is spoken of in your paper?

A SUBSCRIBER.

Deep River, Ct., May 20, 1867.

SHEEP MANURE.

Not having seen any answer to a late inquiry in your valuable paper, for directions for the management of sheep manure, I will give my method: For some time after commencing to keep sheep, I lost much of my manure, although I tried various experiments. I now turn it on the ground where it is made, taking care not to have it more than from four to six inches deep, and when it begins to heat I turn it again, and I have a fine lot of manure for the hill, the next year, as you ever saw

DOWN IN MAINE.

SOFT SHELL EGGS.

The favorite remedy, at our house, for this trouble among the poultry has been the "chop-axe." Take off their heads and put them into the pot. This is warranted sure cure; never known

to fail. But if thought too harsh a remedy, a grass and gravel diet might be found to work a cure in a short time. R.

Stoughton, Mass., May, 1867.

POKE ROOT FOR LICE ON CATTLE.

Where this weed grows on the low wet parts of the farm, there is no excuse but laziness for lousy cattle. Boil four quarts of poke roots so as to leave a pailful of liquor, with which wash the animals thoroughly. It is a sure cure.

St. Johnsbury, Vt., May, 1867. O. BROWN.

A GOOD FLEECE.

My buck "Romeo," was sheared April 27th, ten days less than two years old. The fleece was the growth of seven days less than one year, and weighed 21½ lbs. He was sired by C. O. Stowell's old "Golden Fleece," out of a Victor Wright ewe.

V. M. HUBBARD.

Rochester, Vt., May 12, 1867.

REMEDY FOR THE BORER.

Scrape away the earth from the trunk down to where the roots branch out, and apply with a brush a very thin coat of warm petroleum tar, to about six inches of the trunk and to the exposed roots. One quart is sufficient for fifty trees.

Marion, Mass., 1867. C. C. ALLEN.

MY REMEDY FOR COWS SUCKING THEMSELVES.

Besmear the bags and teats with the most offensive grease that can be found about the premises. Do this every morning for a few days, and the cure is effected. W. S.

Athol, Mass., May, 1867.

SALVE FOR SORE TEATS ON COWS.

Take one pound the bark of the bitter-sweet or yellow-root, and half a pound of lard; simmer fifteen minutes; strain and let it cool. Bathe twice a day. H. ROUNDS.

Chepachet, R. I., May 11, 1867.

AGRICULTURAL ITEMS.

—The *Rural World* says that until the 4th of May there was no rain in the vicinity of St. Louis during the entire spring.

—The Fair of the New Hampshire State Agricultural Society is to be held at Nashua, Sept. 10, 11, and 12.

—If you intend to fight the curculios at all this year, don't delay your operations until they have stung nearly every fruit.

—The annual fair of the Indiana State Agricultural Society, will be held at Terre Haute, commencing September 30th.

—Every seed contains three principles, the organ of nourishment, the nascent plant or plumule, and the nascent root or radicle.

—In an article on docking lambs, in the *Mirror and Farmer*, Dr. Boynton recommends searing the bleeding arteries, not the whole stump, with a red hot iron.

—J. Harris says, in his "Walks and Talks," that while it is true that improved breeds of cattle will not do so well on very little food as will the "natives," it is also true that the "natives" will not stand high feeding as well as the improved breeds. Those who want to feed high so as to get a large quantity of rich milk must get cows with a good share of improved blood.

—A farm with shade and fruit trees set around the house, will sell from $200 to $1000 more than if there were none; while the girls will have more beaux, and the boys be less likely to get the mitten.

—For spring wheat, farmers in Minnesota plow the land in the fall, harrow in the seed in the spring, at the rate of two bushels per acre, and generally harvest from twenty to twenty-five bushels per acre.

—A Wisconsin farmer writes to the New York Farmers' Club, that if the spread of the Canada thistle is not checked in its progress it will be but a short time before the producers of wheat will be driven from the great wheat fields of the West as Adam was driven from the garden in the East.

—At a sheep shearing in Hyde Park, Lamoille county, Vt., Messrs. R. R. Wait, of Stowe, L. Grout, of Elmore, O. H. Cook, S. Stone, H. Dodge, and E. V. Hadley, of Morristown, were among the owners of sheep to whom premiums were awarded.

—In the Sciota Valley, Ohio, the land is so rich that for 40 years corn has been grown on the same ground, and yet they who do the work are tenants, and poor. In Northern Ohio, the land is so poor it is constantly kept in grass, and yet they who do the work are the owners, and are rich.

—While admitting the success of pear raising in city and village gardens and other sheltered locations, the *Maine Farmer* speaks discouragingly of attempts that have been made in that State to raise this delicious fruit by ordinary orchard cultivation.

—A correspondent of the *Rural American* recommends the following as a sure cure for lice on cattle: Take one dozen or more good-sized Irish potatoes, pound them fine, then put them into two gallons and a half of water, boil thoroughly, then let it cool, and apply as a wash, to cows, calves, mares and colts, and all other creatures that have lice.

—By planting 15 or 20 common beans in each hill of his vines, a correspondent of the *Country Gentleman* says he protects his plants from the striped bug, which seems to know beans well enough to keep away from them. The beans must be pulled up or broken off as they begin to shade the vines.

—On his return from a late trip through Virginia, the Carolinas, Georgia, Tennessee, Kentucky, &c., Mr. Moore, of the *Rural New Yorker*, says, the crops throughout the South are generally promising, and the people of all classes seem earnestly endeavoring to reconstruct and augment the industry and productiveness of the country.

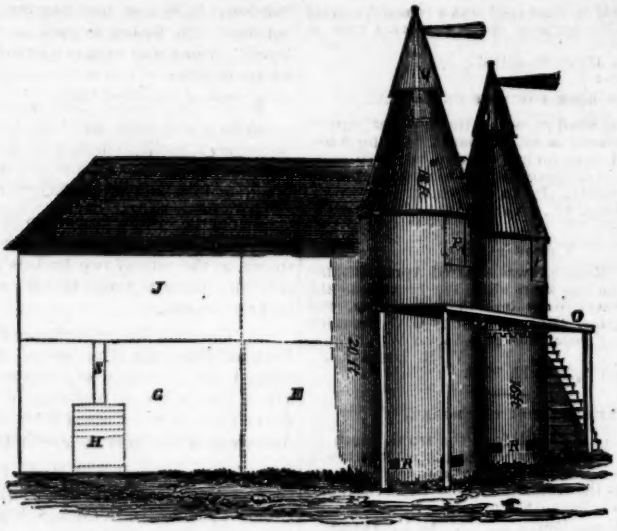


FIG. 9. *Elevation of Double Kiln.*

E, room. *G*, press-room. *H*, press. *J*, store-room. *m*, drying floor. *O*, platform from which to charge the kiln through the doors *P*. *Q*, ventilators or cowls. *R*, lower ventilators. *S*, conductor of cloth to convey hops to press.

CULTIVATION OF HOPS.

Having considered the planting, growth, and harvesting of hops, we now give some directions in regard to

Kiln Drying.

As fast as hops are picked they must be dried. This is an important and delicate process. They may be full grown and well picked, but if poorly dried will prove of little value. There is danger of over-drying and scorching. We saw a specimen of a scorched lot last year which was received on a contract for merchantable hops, and on which a comfortable—to the lawyers—little law-suit was pending. There is also danger of insufficient drying, in consequence of which the hops are liable to be damaged or utterly spoiled. Hence the necessity of nice judgment and practical skill in deciding as to the amount to be applied at once to the dryer, in graduating the heat of the fire, the ventilation of the room, and the exposure of the hops during the whole process of manufacturing the green into the baling article. Mr. Z. E. Jameson, Secretary of the Irasburg Farmer's Club, says that his test of the proper dryness is, when the stem in the middle of the hops will break easily; if it can be twisted and bent, it is not dry enough. Some old wooden building may answer for the hop-house or kiln, but to give an idea of the principles which should be introduced into whatever structure may be used, we copy from Mr. Judd's Practical Hop Culture the annexed cuts and description of a somewhat elaborate structure of a double kiln which may be simplified to suit the means and wants of each individual hop-grower.

The kiln should be built prior to the tenth of September, when, in ordinary seasons, the

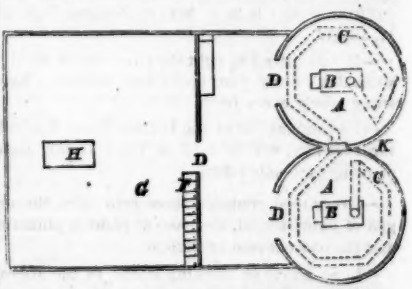


FIG. 10. *Ground Plan of Double Kiln.*

A, stove rooms. *B*, stoves. *C*, pipes. *D*, doors to wood-room. *F*, stairs. *G*, press-room. *H*, press. *K*, chimney.

hops will be in condition to begin harvest. The size will depend upon the number of hops

grown. For a five-acre field, two hundred square feet of surface of drying room will answer. For yards of ten or more acres, two drying-rooms will be found convenient. The hops picked in the forenoon should be put on to dry at noon, and those picked in the afternoon are placed in the kiln at evening. Figs. 9, (at the head of the column,) and 10, with the descriptions, will give an idea of what is needed for a large yard.

The kilns are round in form, and may be constructed of wood or stone. If of wood, a balloon frame will be found most convenient. The floor shown at *m*, Fig. 9, should be fifteen or sixteen feet from the ground. It is generally made of one by one and a half inch strips of boards, set on edge. Over this floor is a cloth, somewhat resembling that used for strainers, hard twisted with small meshes. On the cloth the green hops are deposited to be dried. The kiln, if constructed of wood, should be lathed and plastered, above as well as below the floor. Air-holes are shown at R, which should have a door, so as to be able to close down at pleasure. There are large doors, P, P, into which the hops are thrown from the platform O. A ventilator, Q, is placed at the top of each kiln. The other parts will be understood from the references below the figures. The stoves should be large enough to receive three-foot wood, and the stove-pipe not less than ten inches in diameter, so arranged as to equalize the heat, and dry the hops evenly. The horizontal pipe should be six or eight feet from the kiln-cloth, and extend slightly upward. All dust is to be removed from the cloth daily, and before starting a fire. The pipe should be supported upon standards, with forked iron tops. The utmost precaution should be taken against fire, as the building, during the drying season, will be like a "tinder-box," and it should not be entrusted to a careless hand. The time required for drying a kiln, with the hops say twelve to fifteen inches deep, will be twelve to fourteen hours. To determine when the hop is dry, examine the inside. Three-fourths of all should break or crumble when pressed by the hand. During the drying, it is customary to burn brimstone three or four times; first, when the hops are warmed one-third of the way through, and last when the heat has reached the surface. The amount of sulphur required will depend upon the condition of the hops. If they are rusty, more will be required than at the beginning of picking. The person having charge must determine this matter; from two to three ounces are generally used. Two or three hours before allowing the fire to go down, the hops should be stirred. This is generally done by going through them, taking care to keep the feet under them; then level them off. During this operation the air-holes should be closed. Some turn them over with a shovel, when two-thirds dried. The hops are now ready to be removed from the kiln, but there is no objection to allowing them to remain on the kiln until it is wanted for another lot of green hops. Care should be taken not to break them.

In the same treatise, Mr. Jameson gives directions for building a press for baling; but as ready-made presses, with full directions for using, may be purchased, we omit the details. Hop-Sacking can be procured from merchants, and is known as "Dundee bagging." The size of the bales will be regulated by that of the press; they generally weigh from two hundred to two hundred and fifty pounds.

For several years past the hop crop has been very much injured, and in some cases nearly destroyed by the Hop Louse and other insects. The louse comes early in July, and if not checked increases until it ruins the crop.

CUTTING HAY EARLY.

It is now better understood than formerly that some kinds of hay should be cut early, especially for cows. But in the declaration of new doctrines we are disposed to go to the extreme. Because some grass cut in June or early July, makes better hay, it is not to be assumed that all grass will. Clover, orchard grass and timothy attain their growth and maturity rapidly and early, and very soon, if not cut, lose their good quality; and this is so also of some other kinds of grass growing on rich and warm uplands, and on any highly cultivated land. But there is a great deal of meadow which affords a very superior quality of hay, though cut late in August. This is the case with much of the bottom lands, or river meadows, where the grass does not attain half its growth by the fourth of July, and, if cut so early, would want its superior quality. It dries up rapidly, the juices being only partially developed, and it lacks nutriment. Any one who has had occasion to mow a strip of such grass in the early part of July, and to cut the grass adjoining this strip four weeks later, will be struck with observing the difference, not only in quantity, but in the quality of the two cuttings. There is also a great deal of upland natural meadow, where the grass is of slow growth and late, and where the quality of it for hay improves nearly as long as it continues to grow, retaining its good color and rich aroma quite late in the season. In seasons of low temperature, such meadows will furnish an excellent quality of hay, cut as late as the first of September.—*Country Gentleman.*

HEAVY MERINO FLEECES.—C. N. Hayward of Bridport, Vt., recently sold to L. J. Wright of Weybridge, five ewe tegs which sheared 76½ lbs of wool—the heaviest fleece weighing 17½ lbs.

WHAT TOOLS HAVE DONE FOR AGRICULTURE.

Few farmers, perhaps, have given this matter that careful thought and comparison with past ages, which will enable them to appreciate the immense advantage we possess in the excellent tools that are now used in the cultivation of the soil. Tools and machines are, in principle, the same. When we use an iron bar to move a rock, it is gaining in one way, a power which we gain in another by the use of the derrick. A tool is usually more simple than a machine; it is generally used with the hand, while a machine is frequently moved by animal or steam power. The simpler machines are often merely one or more tools, placed in a frame, and acted upon by a moving power. But neither the tool nor the machine has any force of itself. In one case the force is in the arm, in the other, in the water, the steam, or the animal that turns the wheel.

It is by a combination of different principles that we gain the greatest power, as for instance, in the cider mill, where the use of the lever enables us to gain an immense power; or the screw, which is an inclined plane, winding round the surface of a cylinder, or when the screw is combined with the wheel and axle.

Every farmer who has used a good hay-cutter that has a revolving motion, can appreciate its value when he contrasts it with the tedious labor of chopping hay with a hatchet, on a block, or using a machine with an up and down motion; and so in regard to nearly every tool or machine he uses on the farm.

It would be a source of pleasure and encouragement to any farmer to become more familiar with what science and art has done for him and the world, and especially within the last fifty years. By *science* we mean this,—the *discovering how* a good seed-sower, or mowing-machine may be constructed, and by *art*, how to manufacture the parts and put them together. The first is ascertaining a truth, and the second making that truth available to the world. These terms, therefore, are plain terms, and may be understood by all.

In order, however, that the farmer of the present day may realize the advantages which he possesses over those of any former period in the world's history, he must know something of the condition of those who have preceded him. Let us briefly refer to a few plain facts:

Adam Smith, in his great work, "The Wealth of Nations," says, The property which every man has in his own labor, as it is the original foundation of all other property, so it is the most sacred and inviolable. The patrimony of a poor man lies in the strength and dexterity of his hands; and to hinder him from employing this strength and dexterity in what manner he thinks proper, without injury to his neighbor, is a plain violation of this most sacred property."

A vast number of the cultivators of the soil in Europe, as well as in other parts of the world, and among them our English ancestry, not only were obliged to work without the aid of machines, and with heavy, clumsy and awkward tools, but were continually plundered and oppressed by the government and the landholders.

Before the great charter, King Henry used to seize upon whatever suited his pleasure,—horses, implements, food, any thing that presented itself in the shape of accumulated labor. The husbandry was so imperfect that an unfavorable season for crops was followed by famine. When the ground was too hard, the seed could not be sown for want of the sufficient machine-power of plow and harrow; and when they got a crop, it was thrashed out by cattle at a ruinous loss.

Education was so low, and the principles and relations of things so little understood, that there was the most decided hostility to the introduction of machinery upon the farm or in the work shops. Even as late as 1830, the newspapers of England gave accounts of the destruction of machinery by her agricultural laborers. It was stated that in one district a band of men destroyed all the machinery of many farms, *down even to the common drills.* They could not make up their minds as to the propriety of destroying a horse-churn, and therefore, that machine was passed over.

Historians state that in the reigns of Henry IV. and V. of England, there was plenty of labor to be performed, but the tools were so bad, and the want of agricultural knowledge so universal, that the land was never half cultivated, and therefore all classes were poorly off. They had little produce to exchange for manufactures, and in consequence the laborer was badly clothed, badly lodged, and had a very

indifferent share of the scanty crop which he raised.

The condition of the people must have been poor indeed, in the 14th and 15th centuries. Then there were few glass windows, "for at Alnwick castle, in 1567, the glass was ordered to be taken out and laid up in safety, when the lord was absent!" The people lived mainly upon salt meat, none but the clergy and nobility wore linen, and so careful were those who had it, that night-clothes were never worn! The household furniture among the wealthy families of Colchester, consisted of an occasional bed, a brass pot, a brass cup, a gridiron, and a rug or two, and perhaps a towel. Of chairs and tables we hear nothing. That was in 1301. Queen Elizabeth's palace, had few, if any, glass windows. As late as the reign of Henry VIII. it was said that "the nastiness of the people was the cause of the frequent plagues that destroyed them; that their floors were commonly of clay, strewed with rushes, under which lay unmolested a collection of beer, grease, fragments, bones, spittle, excrements of dogs and cats, and of everything that is nauseous!"

Now, brother farmers, contrast, first, the laws under which they lived, and these under which we live, and then their tools and machinery with ours, and their cabins and wretched clothing and furniture, with those common among us, and you cannot fail to be more contented and happy than ever with your New England homes and farms.

MARKETING WOOL.

After a preamble which sets forth certain "rules" which have been adopted by "Wool Buyers' Conventions," some of which have gone so far as to require an effort to be made to obtain a list of such purchasing agents as disregard them, to the end that they may be discountenanced, and thus thrown out of business,—the following resolutions were adopted by the New York State Sheep Breeders' and Wool Growers' Association, at their Fair at Auburn, May 10th. They were adopted unanimously, after a full discussion, by an assemblage of men exhibiting, as the *Utica Herald* remarks, in its appearance and evincing in its action, more intelligence and practical wisdom, greater frankness and honesty of purpose, than is often gathered together. Among the gentlemen present were Mr. Edwin Hammond, the famous Vermont sheep breeder, Mr. Sanford, of the same State, Mr. King, of Dutchess county, the breeder of Cotswolds, Mr. Holmes, of Washington, Hon. Mr. Pottle, of Ontario, Judge Ketchum, of Wayne, and others, representing about every section of the State of New York.

Our own recollection of the coldness of the mountain streams in which we washed sheep in our younger days, and of the colds, rheumatism and fevers which were clearly traceable to such exposure, often incurred when in a profuse perspiration from the chasing necessary to drive the sheep from the pasture to the brook, leads us to wonder that in discussions of the expediency of washing, so little is said of the injurious effect of this practice on the health and life of the men who perform the operation.

Resolved, That sheep should be guarded as far as practicable from an admixture of hay, straw, thistles, burs, or other like extraneous substances, with their wool.

Resolved. That washing sheep in running streams, in season to shear them at the proper time in the spring, is often dangerous by reason of the coldness of the water, especially in regions where the streams descend from mountains or highlands; that it is not conveniently practicable in other regions, on account of the remoteness of running streams; that in many localities the prevalence of contageous diseases, like scab and hoof rot, render it unsafe to take a sound sheep to any of the convenient washing places; that the natural yolk or "grease" if left in the sheared wool does not injure it in any respect for keeping or manufacturing; that the greatest portion of the wool grown in the world is and always has been shorn and sold unwashed, without objection from any quarter; that we possess certain information that many of the largest wool manufacturers in the United States are willing, and a large number of them prefer, to have American wool brought to market unwashed; and that accordingly we recommend the wool growers of the country to consult their own convenience and inclinations in this matter.

Resolved, That the length of time which should elapse between washing and shearing cannot be determined properly by the number of days, but it should also be regulated by the state of the weather; that wool should not be shorn after washing until it has acquired its characteristic glossy look and soft feeling.

Resolved, That wool is not injured in the least degree for *manufacturing* by being done up as tightly as practicable; that, however, when done up extremely tight and then pressed together by its own weight in large masses, the difficulty of separating it by the sorter is increased; that there is no danger of producing this effect by any ordinary application of strength, when the fleece is folded and tied by hand, but that it may be produced, especially in the case of greasy wools, in wool presses; that the twine used for tying should not be unnecessarily large, or used in unnecessary quantities, and should be of such texture that particles of it will not become incorporated with the wool.

Resolved, That dead wool, or any other wool of inferior quality or condition, should not be put within fleeces; but that such being the prevailing and well understood custom in this State, it is proper, in the absence of any contrary understanding, to put the tags of every fleece within it, if in equal condition.

Resolved, That any uniform and arbitrary rate of deduction on unwashed fleeces operates unequally and unjustly on growers, because some breeds and varieties of sheep have far more yolk or "grease" in their wool than others, because the proportion of yolk or "grease" which is retained in the unwashed fleeces of even the same sheep, depends in a great degree upon the care with which they are housed from rain and snow, because some flocks are kept where their wool becomes mixed with dirt and other heavy substances, while others are not; that such arbitrary rate of deduction for impurities is not tolerated in the sale of other farm products; that no excuse can be set up for it in the case of wool, but the inability of the buyer to determine the relative amounts of the impurity—in other words, his ignorance of his business; that wool growers are not required to submit to loss and injustice to enable wool dealers or wool manufacturers to employ cheap and unqualified agents.

Resolved, That the practice which has obtained among buyers of establishing a maximum price to offer for the best wools of a neighborhood, which is sufficiently low to enable them to offer nearly the same price for all the wools of that neighborhood, thus, in effect, sacrificing the interests of the grower who aims at high quality and condition, for the benefit of the grower of inferior and dirty wools; directly encourages the production of the latter, and offers a premium on those bad modes of preparing wools for market, of which the buyer so loudly complains; that it has tended, more than all other causes put together, to the debasement of American wools; that when the buyer will make a just discrimination in favor of superior quality and condition, he will have no difficulty in securing them.

Resolved, That we favor no proscriptive combinations, and that we utter no menaces to those of our number who do not carry out our recommendations; nor do we propose to be in the least degree influenced by such action on the part of others towards the persons who buy of us.

WOOL SAMPLES APPROVED.

We learn by the *Boston Cultivator* that the committees appointed by the National Wool Growers' Association and the National Association of Wool Manufacturers, for the purpose of examining the Samples of Wool prepared by Geo. W. Bond, in compliance with a provision in the late tariff law, met at the office of Mr. Bond, in Congress street, Boston, May 23.

These committees consisted of the following gentlemen: *from the Wool Growers' Association*, Henry S. Randall of N. Y., Chairman, with N. S. Townshend of Ohio, Ed. Hammond of Vt., A. M. Garland of Ill., and Burdett Loomis of Ct.; *from the Wool Manufacturers' Association*, J. Wiley Edmunds of Mass., Nelson Kingsbury of Ct., and John L. Hayes, of Boston, Secretary.

Each of the eighty-four samples were thoroughly and critically examined. The *Cultivator* understands that but one of the samples was changed, and one omitted, subject to the decision of the Secretary of the Treasury.

Having completed their examination, the following resolution was unanimously adopted and signed by the committee and transmitted to the Secretary of the Treasury:—

Resolved, By the Committee of the "National Wool Growers' Association," and the "National Association of Wool Manufacturers," convened in Boston, May 22d, 1867, under the authority of the Hon. Secretary of the Treasury, to examine the samples of wool, hair, &c., collected and prepared by Mr. George Wm. Bond, to be used as a standard of comparison in the Custom Houses of the United States, under the provisions of the Act of March 2d, 1867, that they have carefully examined and compared all the said samples now prepared, and that, as finally agreed on, they are suitable for the objects for which they are intended.

For the New England Farmer.

NOXIOUS ANIMALS, INCLUDING INSECTS.---NO. VI.

Plant Lice.

The insects which we have had under consideration in previous numbers are the *Agrotidians*, cut worms, of the order *Lepidoptera*—the perfected insects of which are moths or millers, having four wings covered with branny scales. Our present examples—the *Aphides*, plant lice, belong to the order *Hemiptera* and sub order *Homoptera*.

Although the different orders of insects have, very properly, received their names from some peculiarity of their wings in the adult state, as sheath wings, scaly wings, half wings, net wings, &c., yet they have other distinguishing characteristics; and the order in which is found the plant louse, unlike the insects with jaws, take their nourishment by suction, through a horny beak provided for that purpose. Their transformations, also, are only partial, the *larva* and *pupa*, though wingless, resembling the adult. To this order belong various bugs, as the squash bug, the yellow stripped bug, the chinch bug of the West, the bed bug, &c. A perfect plant louse has four wings, perfect and similar, as the term *Homoptera* implies, although the posterior pair is smaller.

We have now a genus of very small animals under consideration,—some of the *Aphidians* being so minute as to escape common observation; yet their injuries are far from insignificant. Indeed, the difficulty of repelling the attacks of noxious animals is nearly in an inverse ratio to their size; for what they lack in magnitude is more than made up in number, while their minuteness shields them from our ordinary means of destruction.

The genus *Aphis* embraces a vast number of species of various sizes and colors; and there is scarcely a plant that grows, that on

its roots, stem, or leaves, is not occasionally infested by some one of these species. The most common color is a light green, nearly correspsnding with the color of the plant on which they are found; though the *Aphis Cerasi* —cherry louse—is nearly black, and the *Aphis Avenæ*—oat louse—is of a reddish brown color.

The most careless observer of apple trees must have frequently noticed the *Aphides Mali* —apple tree lice—and their effects, the curled leaves, on the previously rapidly growing twigs. He must have noticed, also, that such twigs are frequented by a host of busy ants, passing up and down the tree. The almost invariable association of these two very different insects on the apple tree, has furnished proof positive to some, that the lice, so called, were the offspring of the ants; but a closer examination of the louse, especially with a magnifier, will disclose two processes projecting obliquely upward, one from each side of the upper half of the abdomen. These projections are called honey tubes, because from them the little animal at short intervals excretes a sugary fluid, in taste and consistence not unlike honey. We suppose that this excretion is not true fecal matter; for the like appendages on the grain louse, according to Dr. Fitch, excrete no honey, and as we infer, nothing else. Again, these abdominal appendages are said by entomologists to *secrete* the sugary fluid; and this would be an improper expression if these tubes were mere outlets of ordure; and it would also be strange indeed, to find in any animal, two or three such outlets. We are told that *Aphides* sometimes colonize on the leaves of high trees, or in other situations, undiscovered by ants, where the accumulation of their saccharine excretions takes the name of honey-dew; but this should not be confounded with another honey-dew which was such a mystery to the ancients, but is now believed to be an extravasation of sap, condensed by the air and heat of summer.

But to return to the apple tree lice. The organism for secreting this sugary fluid is probably in the honey tube itself or near its base. The common small black ants of the fields, which have a large sugar-tooth development, are careful that none of that insect honey dew shall be left on the apple trees to puzzle modern observers.

We are not surprised at the remark of Reaumur that, "It appears that nature rears *Aphides* on plants for the purpose of feeding other insects, which without them, would perish with hunger," for this in accordance with an obvious law of nature; nor are we surprised that an animal should have an organism for secreting from the fluids of its own body nourishment for its young, for such an organism pertains to all the mammalia; but that an animal should have an organism for no other assignable use but that of secreting nourishment for other animals, is most strange and anomalous.

Other anomalies pertaining to this insect will be noticed in our next number.

I. B. HARTWELL.

Wilkinsonville, Mass., 1867.

For the New England Farmer.

THE SALT HAY CROP OF ESSEX CO.

Essex county, Mass., in the vicinity of the ocean, is somewhat noted for the crop of salt hay, which it produces naturally and without cultivation. It is an interesting subject of inquiry whether this spontaneous production is, in reality, a source of much profit and wealth to the county.

All other kinds of grasses, except fresh meadow, or what is called swale, require some outlay and labor in their cultivation; and unless something is continually added to the land as well as taken away, it will eventually run out and hardly pay for the labor of getting the the crop. But the salt marsh needs no manuring or working. The deposits from the salt water by the tides being sufficient to enrich it, and keep it in the same condition from year to year. Indeed, it seems to be incapable of improvement to any great extent. All that has ever been done to improve its condition, that I know of, being to dig ditches about one foot wide, and two or three feet deep, to take off the water quicker, both salt and fresh. This is a great improvement on such marshes as are intersected by creeks, and where the hay is removed by boats. It takes off the water from low places and "salt-ponds," where it would otherwise remain all the time during a course of high tides. It also prevents the formation in low places of a sort of crust, something like hard leather, which, when dry, completely kills out the grass. On shore marsh it has been doubted by some whether ditching, on the whole, was productive of any good results. Although it increases the crop frequently twofold, it causes the marsh to produce another kind of grass which is lighter, less salt, and inferior in value to what it bears naturally. It is said further, that while it increases the quantity for a few years, it does not hold out, but grows less again.

The towns of Essex, Ipswich, Rowley, Newburyport, Gloucester and Lynn, are the most distinguished localities for this kind of land; but the inhabitants of all the adjoining towns, to the distance of twelve or fifteen miles, own perhaps nearly one-half of the land, and make a business of getting the hay annually. The harvest commences about the middle or last of July; and holds out till the frosts render the hay worthless. As the land will not admit of ordinary carting, various ways are practiced to get the hay ashore from the marsh. On shore-marsh, where the distance is not great, it is generally carried off on hay poles. Where the distance is greater, it is carted off by horses, furnished with a peculiar kind of broad shoes made for the purpose, on racks with wide-

rimmed wheels. This mode injures the land considerably, making the track where it is carried off nearly unproductive. Large quantities are annually stacked on the marsh on stakes driven into the ground, and projecting high enough to keep the hay out of the way of ordinary tides, to be removed in the winter by teams when the creeks are frozen over. But probably more is removed by boats than in any other way. This is done both when the hay is in a dry and green state. On the theory that the salter the hay the better it is, many think that the quality of the fodder is better when it can be cured on the marsh, rather than be moved and dried on the upland. This is the opinion of the writer, but there is much difference in the minds of farmers about this; and still more in their practice, as most are obliged to consult their necessities and convenience, as the business must be attended to frequently on such a day, and at such hours, or run the risk of losing the labor and the hay.

The salt hay harvest, under any circumstances, but especially for those living at a distance, is very hard and laborious. As stated above, on account of the weather and tides, and the distance, it is always necessary to attend to the work in good earnest when we get there. Drones and lazy persons, though they may be endured at home, cannot be tolerated at all here. Even those of delicate constitutions, or slightly indisposed, however good their intentions, are generally advised to stay at home. Employers and laborers, too, in this work must not be over nice as regards refined and literary associates in labor; nor too exact as to set hours of work. The advocates of the eight hour system will, I think, find it very difficult to make a rule that will work well in the salt hay harvest. Twelve, fifteen, and even eighteen hours, owing to high winds, tides and disappointments, are sometimes necessary to accomplish the day's work, and attain the object contemplated in the morning; and this, when it cannot be helped, ought to be submitted to by laborers without complaining. But the exposure, hard work, and long days necessary in this employment, are partly balanced by the excitement, hilarity and good living which very often go with it; so that laborers, as a general thing, of robust health are not averse to engaging in it. The business is regarded as healthy for most people.

Thirty years ago salt hay was worth from eight to twelve dollars per ton in the market, and the price of labor was $1 to $1.25 per day. At present it is worth from $20 to $25 per ton, and the price of labor is $2 or $2.50 per day, and board.

Marsh land, for the purposes of taxation, is valued by the assessors at about thirty dollars per acre. When sold at auction or private sale, the price varies according to quality and location; but the above may be considered a fair average price. We think one ton to an acre may be considered an average crop. Some acres will produce two tons.

When the hay has to be freighted an ordinary distance, one man is reckoned to perform the labor of getting one-half acre, or about twelve cwt. of hay, in a day. The hay is then landed and spread on the upland, or loaded on wagons to be carted to the owner, in a green state; making the expense of getting it in this way, including wharfage and boat and other incidental items, in round numbers, about seven dollars per ton. It then has to be cured; the only labor required in good weather being to turn it once, and rake it up. The expense of carting it five miles is about $2.50 per ton. Thus making the whole cost of getting and hauling five miles, about $12 per ton.

Of course these statistics will be varied very much by the weather, tides, &c.; but under ordinary circumstances, I think it will be seen that a fair profit is left for the owner. Those who live in the immediate vicinity of the marsh can doubtless secure the crop some cheaper and easier than those who live more remote. And the shore marsh yields less burden, but of a better quality than the broad marsh; and the expense of getting it is less. The hay that is freighted varies much in quality; some kinds of coarse thatch being worth but little except for manure. It is excellent for that, and is largely used by some farmers for litter, &c., after being picked over by the cattle.

This kind of fodder appears to be growing in favor with the community. It is more extensively teamed to Boston and other places remote from its locality, than formerly, and finds a ready market. In the immediate vicinity where it grows, it is fed out to all kinds of stock. It was formerly thought not to be good for horses; but the writer has been informed that some horses have been wintered entirely on the coarser kinds, with the addition of some meal daily, and were very strong and in good condition all the time. It is frequently mixed with swale hay, and fed out to oxen and cows, which will thus consume both kinds, when the meadow hay would not be eaten at all alone.

Its nature is to impart flesh and strength to animals rather than fat. Working oxen kept chiefly on the better kinds have been noted for their sleek appearance, and their strength and ability to labor; but it is never used for the purpose of fattening. It should not be fed out extensively to cows giving milk. They will eat it with great avidity after being confined to fresh fodder; and a small quantity is beneficial and even necessary for them. But the milk from cows kept principally on salt hay, though of the better kinds, is apt to be blue and thin, and of a disagreeable taste.

I think the facts fairly warrant me in saying that a certain amount of this kind of fodder, though it may not be absolutely necessary for stock, is very beneficial, and that the statistics show that farmers get ordinarily a fair compensation for their labor and capital invested.

Like almost everything else, the business may be carried to excess and overdone. I incline to the opinion that the *salt hay crop* is a benefitto the farmers of Essex county; and I submit that all farmers who do not have to go more than seven or eight miles are better off for having a share in it. N. B. BUTLER.

Hamilton, Mass., March 28, 1867.

REMARKS.—We have sometimes doubted whether the salt hay crop of Essex county, has been profitable to the farmers who harvest it; but the facts so clearly and minutely stated in the above well drawn article, make us agree with the writer in the result to which he has arrived, viz:—that farmers who do not have to go more than seven or eight miles for it *may* be better off for having a share in it.

FEEDING EARLY CUT GRASS.

In some notes on the farm of Hon. Harris Lewis of Frankfort, N. Y., President of the Little Falls Farmers' Club, by Mr. X. A. Willard, in the *Country Gentleman*, we find the following remarks on his use of early cut hay:—

Mr. Lewis holds that grass, all things considered, is the best food for milch cows; and that *dried grass* is cheaper and better for cows in the spring, than hay and grain. He usually commences cutting his grass in June—cures it, if possible, without rain, and so that it will come out of the mow with a bright green color, and with the fragrance of newly mown hay. This he uses for cows giving milk in spring, before turning out to pasture.

He used to feed his cows in spring with grains, ship-stuffs, &c.—often what would be called "high feeding"—but found it to result in various troubles and serious losses; garget attacked the udder, ill-health prevailed in various ways, and his cows gave out sooner than they ought. He then changed to his present system of feeding, and with the most happy results. His cows are healthy, they keep in flesh, they yield a good supply of milk, and it is all done with much less expense than the grain feeding. His cows to-day (May 13th,) are in good flesh, thrifty, healthy and strong, and yet they have not had a mouthful of grain or any other feed than "*dried grass.*"

We have given the facts, and they may perhaps be suggestive to those who have been paying out large sums for grain to feed, and who perhaps have troubles in their herds for which they are unable to account. If the system adopted by Mr. Lewis is the true one, (and he contends that it is,) then it should be generally introduced. To say the least, it is worth the testing, and our stockmen and dairymen will do well to make some provision the coming season for harvesting acrop of "*dried grass.*"

UP IN THE BARN.

BY THOMAS LACKLAND.

Old Farmer Joe steps through the doors
As wide to him as gates of Thebes;
And thoughtful walks about the floors
Whereon are piled his winter stores,
And counts the profits of his giebes.

Ten tons of timothy up there,
And four of clover in the bay;
Red-top that's cut, well, middlin' fair,
And bins of roots, oblong and square,
To help eke out the crops of hay.

A dozen head of cattle stand
Reflective in the leaf-strewn yard;
And stalks are stacked on every hand,
The latest offering of the land
To labor long maintained and hard.

Cart-loads of pumpkins yonder lie—
The horse is feeding in his stall,
The oats are bundled scaffold high,
And peas and beans are heaped hard by,
As if there were some festival.

At length Old Farmer Joe sits down—
A patch across each of his knees;
He crowds his hat back on his crown,
Then clasps his hands—so hard and brown—
And, like a farmer, takes his ease.

"How fast the years do go!"
"It seems, in fact, but yesterday,
That in this very barn, we three—
David, Ezekiel and me—
Pitched in the summer loads of hay!

David—he sails his clipper now;
And 'Zekiel died in Mexico—
Some one must stay and ride to plow,
Get up the horse and milk the cow—
And who, of course, but little Joe.

I *might* have been—I can't tell what!
Who knows about it till he tries?
I *might* have settled in some spot,
Where money is more easy got;
Perhaps beneath Pacific's skies.

I *might* have preached, like Parson Jones;
Or got a living at the law;
I might have gone to Congress, *sure;*
I might have kept a Water Cure;
I *might* have gone and been—oh, pshaw!

Far better is it as it is;
What future waits him, no man knows:
What he has *got*, that *sure*, is his;
It makes no odds if stocks *have riz*,
Or politicians come to blows!

Content is rich and somethin' more—
I think I've heard somebody say;
If it rains, it's apt to pour;
And I am rich on the barn floor,
Where all is mine that I can raise.

I've plowed and mowed this dear old farm,
Till not a rod but what I know;
I've kept the old folks snug and warm—
And lived without a twinge of harm—
I don't care how the storm might blow.

And on this same old farm I'll stay,
And raise my cattle and my corn;
Here shall these hairs turn wholly gray;
These feet shall never learn to stray;
But I will die where I was born."

And Farmer Joe pulled down his hat,
And stood upon his feet once more;
He would not argue, after that,
But, like a born aristocrat,
Kept on his walk about the floor.

CIRSIUM (CARDUUS) ARVENSE.

"*Vitium agrorum apud nos primarium est.*" This will be readily translated by many a farmer's boy who never studied Latin at all. Just look at the picture!—"Canada Thistle—it is the greatest pest of our fields." Right, first time.

But why call it Canada Thistle? If you look in Webster's large Dictionary, you will see what it is called in some half a dozen European languages, where it is execrated as heartily by barefooted children, and barehanded boys and men—by the Latins, the French, Germans, English, &c.,—as it is by us here in America. It is supposed that it emigrated to this continent with the Canadian French, who came from Normandy, where it was known to abound. From Canada it might have been smuggled into the States, or possibly it crossed the Line under some "reciprocity treaty" of old. At any rate, it is here, to our sorrow, and the question now is what shall we do with it? Is it to go wherever we go, budding and blossoming on every acre we cultivate, and extending the germs of its pernicious existence on the wings of the wind, over the broad prairies and fertile valleys of the West, as it has over so large a portion of our New England farms?

SOILING AND WHEAT IN MASSACHUSETTS.—Mr. Jas. L. Humphrey of New Bedford informs the New York Farmers' Club that he tried spring vetches for soiling last summer, and likes them much. He sowed them on ground which was prepared for barley, and obtained a large crop, which his cows relished highly. He fed it alternately with sweet corn. He had always found one difficulty in feeding largely on sweet corn,—it has a tendency to induce garget; but as he fed it last year, there was no trouble in that direction. After clearing the ground from the vetches, which it left very mellow, plowed and sowed to white winter wheat and grass seed, giving an application of ashes at the last harrowing, and now the wheat looks finely. He has never had trouble in raising good wheat on rich ground, early sown and fed off once during the fall; having once raised 32 bushels Southern white wheat to the acre.

CATERPILLARS.—Thanks, that we have a partial deliverance from the pest. We have visited some hundreds of trees, and among them all have not yet found half so many caterpillars as we found last year on two dozen trees. Who can tell us what has arrested them so suddenly? We have been told, June 2, that the *canker worm* has not made his appearance in any large numbers. How utterly beyond the power of man the progress of these minute creatures has been, and yet how silently and effectually their march has been stayed by Him who ruleth all things. "Thus far shalt thou go," is the fiat which they must obey, as well as the proud waves of the sea. How well it becomes us to be humble, trusting and hopeful, in a position where we know so little of the operation of natural laws about us.

HEAVY FLEECE.—We are informed by a correspondent that O. C. Burton, of Windham, Vt., sheared a fleece of thirteen months' growth, that weighed 25 lbs. 2 oz., from a ram four years old in June, that weighed 133 lbs. after being shorn. He was sired by the famous Hotchkiss buck, Hampton, N. Y., and was bought by Eli Ray, of East Poultney, Vt.

HARVESTING THE SMALL GRAINS.

VERY little critical observation has been given by our people as to the particular period in the growth of wheat, barley, rye, and oats, when it is best to cut them, to secure the largest amount and best quality of the nutriment which they severally contain. A few careful experiments have been made by American farmers, and many in England and other European countries. Wherever they have occurred, the testimony is uniform that in, order to secure the best results, grain should be cut *some days before it is fully ripe.*

In the harvest which will soon take place, there will be opportunity for every farmer to test the question for himself, by cutting a portion of his grain at that moment when the kernel or berry is fully formed, but so soft that when he squeezes it between his thumb nails he can reduce it to a pulp, and notice a slightly milky juice in the mashed mass. Then leave a portion of the grain standing ten or twelve days later, and upon threshing, cleaning up, grinding and using, carefully compare the results.

If this course were adopted by three or four intelligent farmers in every neighborhood, and reported to the agricultural papers, it would do much to settle the question and introduce a practice which, in the aggregate, would save many thousands of dollars to the farmers of New England. In the West it might be millions.

According to an experiment by Mr. John Hannam, of North Deighton, England, it was evident that the wheat reaped a *fortnight* before it was ripe, had the advantage of the ripe in every point.

1. In weight of gross produce, 13 1-5 per cent.

2. In weight of equal measures, nearly 1-2 per cent.

3. In weight of equal number of grains, nearly 2 1-5 per cent.

4. In quality and value, 3 1-4 per cent.

5. In weight of straw, more than 5 per cent.

Some of the advantages, then, in cutting grain before it is fully ripe, besides the better quality and the intrinsic value of more than *three and one-fourth* per cent. are:

1. That the straw is of a better quality, which is an item of importance, now that all kinds of fodder for horses and cattle are selling at prices entirely unprecedented, we believe, in this or any other country. Sir H. Davy says that in the sap of wheat, the straw, and in all succulent plants, there is *naturally* a great proportion of *mucilaginous and saccharine matter*, and the greatest proportion of this is present before the flower is dead ripe. So in wheat, when we allow the straw to remain till thoroughly ripe, a portion of the sugar is converted, by the action of light, heat, &c., into mucilage, and a great proportion of the nutritive powers are absorbed by the atmosphere, or lost in some manner; for, as Mr. Sinclair observes, there is a great difference between straws or leaves that have been dried after they were cut in a succulent state, and those which are dried by nature while growing. The former *retain* all their nutritive powers, but the latter if *completely dry, very little, if any.*

2. We have a better chance of securing the crop. All grasses and grains are more readily and cheaply harvested in July than in August. The days are long, the sun hot, the atmosphere more clear and with more air than later in the season. So that, if we cut grain ten days or a fortnight before it thoroughly ripens, we shall be quite likely to have secured the whole harvest at about the time when we have heretofore just commenced it.

THE CURCULIO.

The *Prairie Farmer* of June 1 closes some remarks upon the ravages of this insect on the peach crop in Southern Illinois, and of the means adopted for its destruction, with the following paragraph:

The Editor of the NEW ENGLAND FARMER asserts in his last issue that, in spite of this insect's numbers and depredations, entomologists are ignorant of its manner of passing the winter, or what becomes of it at that time. This is a mistake. Entomologists know, and most fruit men know, said editor to the contrary notwithstanding, that the curculio hibernates in the perfect or beetle state, and its natural history is as well known as that of the cow.

This we regard as a rather strong representation of our language, and as a pretty strong statement of the knowledge claimed by entomologists of the history of the curculio from the time it assumes the perfect state in July or August, to its appearance on the young fruit the succeeding spring.

In another column of the same paper, the following commendatory sentence is quoted in an editorial notice of Dr. Warder's new work on the apple: "To say that we are pleased with this book is but a tame expression; we are delighted, for it gives us new facts—it places Western pomology on a firm basis."

Now, does Dr. Warder claim to be as familiar with the natural history of the curculio, as with that of the cow? On the contrary, he speaks of it as "the noted and notorious, and yet *little known*, Plum Weevil." This, surely, is a rather "tame" confession for the author of a practical book on pomology, intended, specially with all its "new facts," for a section in which the ravages of this insect are as serious as they appear to be, from the statements of some of the most careful observers in the "favored northwest." Dr. Walsh, of Rock Island, Illinois, says: "Out of the choicest apples selected for exhibition at our State Fairs, a large proportion will be found, on close inspection, to be more or less blemished from this cause." Dr. Hall, of Alton, Ill., "does not recollect to have seen a single apple the past season, grown at that point, that did not contain from one to twenty or more punctures made by this insect." If these are facts, is Western pomology placed on a firm basis by a work which devotes less than a page to this "noted and notorious, and yet little known" pest?

The most complete history of the curculio that we have ever seen, is that by Dr. Walsh, occupying thirteen columns in the April number of the *Practical Entomologist*. He describes, particularly, three distinct snout-beetles of the curculio family—the "True Curculio;" the "Plum Gouger," and the "Four-humped Curculio."

THE TRUE CURCULIO, (*Conotrachelus Nenuphar*, Herbst,) he says may be distinguished from all other North American snout-beetles, by having on the middle of each of his wings an elongate, knife-edged hump, which is black and shining, so as to resemble a piece of black sealing wax. Behind these two humps there is usually placed a broad clay-yellow band, marked in the middle with white; but sometimes this entire band is white.

THE PLUM GOUGER, (*Anthonomus prunicida*, Walsh,) though often confounded with the curculio, and sometimes supposed to be the male of that insect, bores a round hole like the puncture of a pin, wherein to deposit its egg, instead of the crescent of the curculio, making five or six such holes in the plum, from which the gum exudes. The larvæ bore directly into the kernel, on which they exclusively feed.

THE FOUR-HUMPED CURCULIO, (*Anthonomus 4-gibbus*, Say,) is of a dull brown color, shading into red-rust behind, with four projecting humps on its wing-cases, none of which are shinging black, as in the case of the common "curculio."

Dr. Walsh gives the following characteristics of these three curculios, by which one may be distinguished from the other.

The common "Curculio" has a snout which hangs down like the trunk of an elephant, and which he can, whenever he chooses, fold backwards between his legs, although he has no power to project it straight forwards. On the other hand, the Plum-gouger and the Four-humped Curculio usually carry their snouts projected horizontally or nearly so, in front of them; but upon occasion can depress them vertically, although they have no power to fold them backwards between their legs. Of these two, thus agreeing as to the structure of their snouts, the Plum-gouger is at once distinguishable by having a smooth back, without any humps on it, whereas the Four-humped Curculio, as its name indicates, has two very conspicuous humps on each of his wing cases. As regards their habits, the common Curculio infests stone fruit more especially, but not unfrequently has been known to attack pip-fruit; while, so far as is at present known, the Plum-gouger is exclusively confined to stone fruit, and the Four-humped Curculio to pip-fruit.

We are tempted to extend these extracts, but must confine ourselves to what the writer says of the history of the curculio after reaching its perfect state—of how and where, in fact, it passes some ten months in each year, and what it does for a living from July to May.

In relation to the true curculio, Mr. Walsh says:

Some of these perfect beetles come out as early as the middle of July—some in August—some as late as the latter end of September. Hence, as it seemed incredible that a beetle coming out in July should live all through the winter, and until the next season's crop of plums were set, and as no one had as yet ascertained that any "Curculio" hybernated in the beetle state, Dr. Fitch, and, in the earlier edition of his work, Dr. Harris, have suggested the hypothesis that the species is double-brooded; the second brood being supposed from the analogy of a very distinct snout-beetle which attacks the plum in Europe (*Rhynchites cupreus*,) to lay its eggs in the twigs of the infested trees, the larvæ proceeding from which eggs pass the winter in the twig, and afterwards produce the beetles that sting the fruit in the following summer. (*N. Y. Rep.* II § 52, and *Inj. Ins.* edit. 1841, p. 68.) But, in the first place, there is no proof of any such fact; and, in the second place, I have already shown that Dr. Trimble actually found specimens of the "Curculio" hybernating under the shingles of a roof, in the chinks of stone walls,

and under the bark of an apple tree; (*Fruit Insects*, p. 99;) and since then I have been informed by Mr. Rathvon, that he has himself found specimens hybernating under the bark of the cherry and the wild cherry in the months of March and November. Dr. Harris has also recorded the fact, that he has "found these beetles as early as the 30th of March," (*Inj. Ins.* p. 75,) apparently in the latitude of Massachusetts—a fact which is quite irreconcilable with the hypothesis of their having come out from the pupa state at so early a date in so cold a climate, and evidently implies that they must have passed the winter in the perfect state, and been tempted, as often happens in such cases, by some peculiarly fine and warm day, to come forth temporarily from their winter quarters into the open air. The truth of the matter is, that most authors have been disposed to underrate the duration of insect life during the perfect or winged state, putting the average period at a few days or weeks, when perhaps a few months would be nearer the mark. *There is little doubt* now, in my mind, that the "Curculios" bred from the fruit of one year are the same individuals that puncture the fruit of the following year."

Of the Plum-gouger he says:

Occasionally, at all events, and *probably* as a general rule, the larva of this snout-beetle, instead of going underground to transform into the pupa state, as that of the common "Curculio" almost always does, transforms inside the stone of the fruit which it inhabits, the perfect beetle emerging as usual, through a round hole which the larva had previously cut for that express purpose.

His knowledge, or rather his want of knowledge, of the history of the Four-humped Curculio, is stated with that frankness and modesty which ever characterize the truly scientific investigator:

I have never traced this insect through its transformations, and do not know how long the larva remains in the infested fruit—whetner it retires underground to transform or transforms within the apple—or whether the perfect beetle makes its appearance the same season or in the following spring. Neither do I know whether apples containing these larvæ fall prematurely from the tree. Mr. Cutter observes, that he found it impossible to jar these snout-beetles off the tree on to the sheets. I have always myself succeeded in dislodging any number of them from crab and thorn trees, by beating the boughs into an inverted umbrella. But no doubt, as it belongs to the same genus, and has the same structural peculiarities as the Plum-gouger, it will require equally severe jarring to bring it to the ground. Whether it can be effectually counterworked in any other manner, can only be told after we become more fully acquainted with its habits.

He then adds:

There are several other snout-beetles which infest fruit trees, either cultivated or wild; but their history and habits yet remain to be fully investigated, and I hope to be able to devote some considerable attention to this subject during the coming season.

We cannot close this article without remarking that this one paper on the curculio is richly worth the price of a year's subscription to the *Practical Entomologist*, published at Philadelphia, at 50c per year, nor without expressing the hope that the natural history of this insect will soon be, if it is not now, "as well known as that of the cow."

Although some four columns of this article are devoted to a consideration of the means of destroying the curculio, we find nothing new in the suggestions of Dr. Walsh. Gathering up and destroying the fruit by children or pigs; jarring the insects upon sheets; and dusting the tree thoroughly with air-slaked lime, are the only remedies which are not pronounced "moonshine." He does, however, recommend an improved sheet apparatus, consisting of a light frame, on a wheel, or a sort of extended wheel barrow, of some 11 feet wide by 13 long, covered with cloth, with an opening to admit the trunk of the tree to near the centre of the platform, where a suitable bunter is placed, by which the tree is jarred. As the insects fall they roll into depressed places in the sheet, and from thence into pockets or sacks, from which they may be taken and destroyed.

HIS COWS ALWAYS DO WELL.

In a letter to the New York Farmers' Club, Mr. J. L. Humphrey of New Bedford, gives the following account of the management by which his cows are exempt from caked bag, and other diseases which afflict many dairies:—

I never have any trouble in that direction, no matter how fat the cow may be at the time of calving. I keep the best cows that I can get, and find it the most profitable for my purpose to have them calve only once in eighteen months. I feed moderately on grain—generally oats and corn mixed, with the addition of roots during the winter—so that my cows, though they may milk down thin during the first six or eight months, will always come up again in flesh before I dry them off. I never let them go dry less than *two months*; three is better if it occurs in summer, and I always take away the grain as soon as they are dry, and sometimes before, if too much inclined to milk. For two or three weeks before calving I keep them on a spare but laxative diet—if in winter early cut hay or corn fodder and hay with a few roots but *no straw*. After calving give one pound of Epsom salts, and a few hours after a warm *bran mash*—scalding the bran with boiling water—commencing to feed a little hay in twelve hours from calving, and gradually increasing to full feed after two or three days. Since I have adopted this course I have had no trouble with the bag but what would readily yield to a few applications of hot water *followed by dry rubbing*.

PRINCIPLES INVOLVED IN HOEING CORN.

THE popular opinion is, that hoeing is done *merely* to *kill weeds*. It will not be difficult to show that faithful hoeing does much more than this, even to *warming*, *moistening*, and *manuring* the soil while hoeing up the weeds.

The air about us is always moist. The hotter the day the more moist it is. It has been ascertained that in a hot day in July, more than thirteen hundred gallons of water have been found to evaporate from a single acre of land. The soil has a strong attraction for water, and it is a part of the duty of the atmosphere to penetrate the soil, and moisten it, as well as to give us the breath of life. But the soil, on its part, must be in a suitable condition to receive it. If the surface is compact the air cannot readily enter it. When the weeds are destroyed by the hoe, the surface is made loose, the air penetrates it freely, and carries along the moisture it contains, and *thus waters the field*.

It follows, then, that a field often hoed, whether there are weeds or not, will withstand a drought better than one that is not hoed.

The soil is as active as the air, for the moment the air enters, the soil robs it of its moisture and passes it along to the roots of the plants. Thus a carefully cultivated field may be covered with luxuriant crops during a drought, while those on the hard surface of another may be perishing for want of moisture.

The air also contains other elements besides moisture. One of them is *ammonia*, which is exceedingly valuable to crops, and it is sifted from the atmosphere by the falling rain. When the surface of the field is fine, showers readily penetrate it, carry the ammonia down into the soil, and thus manure it by every rain that falls. The water passes along,—the ammonia it contains touches minerals that are in the soil, and dissolving portions of them, supplies the roots of plants with the food they need.

Were it not for the agency of ammonia, soils might abound in valuable minerals which would remain inactive, and crops upon them would fail to come to perfection. Thus, it seems clear, that keeping soils in a porous condition, results in an actual *manuring* of them.

Water thus admitted to the soil contains a sensible amount of *heat*, which is arrested by it, and kept there to warm and stimulate the roots of plants.

Is it not clear, then, attentive reader, that frequently stirring the soil does actually *destroy* weeds, *moisten* the soil, *warm* the soil and *manure* it? The theory is rational and sustained by often-repeated experiments. Every farmer may satisfy himself by a little care and considerable observation, that the operation of hoeing has an efficacy entirely beyond that of merely destroying the weeds.

We are not yet sufficiently systematic and pains-taking in our farm work. We do not generally realize the fact, that thorough tillage is almost as good for the crop as a light application of manure to lands cultivated in a slovenly manner.

We must feel assured of the fact that *tillage has the same effect as manure;* that the literal meaning of the word *manure* is *hand labor*, as well as of a dressing. To manure the land is to hoe, to stir the soil, to expose it to the atmosphere, to plow, to harrow, to cultivate, in addition to all we can get from the stalls, or in any other way, as manure.

The ancient Romans made Sterculius a god because he discovered that the droppings of animals had the same effect upon the soil as to hoe it!

Keep these facts in mind, and hoe, *hoe*, HOE, until harvests are ready to be gathered if a weed is to be found among them.

GROWTH OF INDIAN CORN.

There are various opinions among farmers, as to the best time for planting Indian corn. Some contend that the seed must be put in the 10th of May, others prefer the 20th, while a third class are governed more by the season and the condition of the soil, than by any dates.

We have before us an old "table of the growth of Indian corn, showing the number of days from planting, for each period of growth." From this it appears that the principal circumstance which caused any difference of growth was in the time of planting. What was planted about the beginning of May, appears to have required from eighty-six to eighty-nine days to be fit for eating. What was planted earlier took a longer time to come forward and did not ripen at so early a date as that at the beginning of May. That planted in July lost in the fall the time it gained in summer,

and furnished green corn for the beginning of October. That planted about the middle of June, kept its growth the whole summer, and became fit for eating in seventy-two days.

In our own practice, we have found corn that was planted during the first five days in June, to do just as well as that planted on the the 20th May. If planted early it has the recommendation of being done and out of the way. Corn that is planted too early, however, comes up in a sickly condition, and has a feeble habit which it takes a long time to recover from.

For the New England Farmer.

VARIOUS MATTERS.

MR. EDITOR:—What has become of the caterpillars this year? In our neighborhood we have not a tenth part of the usual "crop." They hatched well, about the 23d of April, then came the cold and rainy week which seemed to finish the young broods. Can your readers in other localities make a similar report? Certain it is that, around our diggings, there is a most extraordinary scarcity of these *annuals*.

One of your correspondents recently inquired how he could best preserve eggs. Let him pack them ends upward, in a cask, or barrel, with oats, rice shucks, or sawdust; head them up and place them in a cool place, taking care to *turn the barrel over*, end for end, every two or three days. Eggs thus packed can be easily kept for many weeks, if not exposed to extreme heat or cold.

In regard to raising plums, I have been quite successful, though living where the curculio feels quite at home. I depended mostly upon the trees when quite small. A plum tree soon comes into bearing. I have gathered heavy crops from trees of two or three inches in diameter. Of course the curculio is the only hindrance. I used to have a sheet tacked to a couple of poles, spread it under each tree morning and evening from the time fruit was the size of a pea until the pits were formed, and then jar the tree with my hand. The "little turks" fell as though they were lifeless, as indeed they very soon became in consequence of a smart pinch between my thumb and fingers. On a white sheet the eye soon detects them, lying curled up, shamming dead, and very much resembling raisin seeds. It is not much trouble to attend to a dozen trees for a month or so. By the time my trees were too large to jar with the hands, they were pretty well overrun with the black knot, so I removed them altogether, and put young trees in their places, which came into bearing in about three years.

As for the BLACK KNOT, I know not what it is, nor have I ever seen any satisfactory information in regard to its cause. There is but just one remedy for it, and that not effectual; the KNIFE. Spare not. The moment the excrescence pushes out in the bark, cut it off, and *cut deep*. Regard not the scar left behind. If a limb be badly affected, even though it be a large one, cut it entirely away and burn it. If the difficulty is in the main trunk, cut the bark quite down to the wood, without fear. A little spirits of turpentine applied to the wound does no harm, and if there be insects, as some contend there are, they will be surely killed. In this way only can the plum tree be kept in good condition. And as soon as the disease has spread quite over the main stems and branches, as it generally will in time, it is much better to remove the old and plant a young tree in its place. Although you cannot expect so large crops, the fruit will be fairer and better, while it will be much easier raised.

Canker worms are now busy at their work of destruction. They are not as plenty as usual, many of them, as I think, having been killed by the cold spell before mentioned. But there are a plenty left. By and by, when the green leaves have given place to the inevitable "sere and yellow" which marks their track, I want you to go with me some afternoon and I will show you the result—not of speculation—but of determination. I want you to look upon an orchard of over six hundred trees, in which you would become poor at hunting canker worms at a shilling apiece, while upon three sides adjacent, it is, as Captain Cuttle would say, "quite the reverse." *The trees have been protected*, in truth as well as in theory. And, having used your eyes, I want you to use your pen, and tell anybody and everybody that whosoever *will* can escape the periodical picture of desolation which we are so accustomed to see around us. IDEX.

Newton, Mass., June 6, 1867.

SHEEP DISEASES.

We copy the following report of a talk upon this subject at a late meeting of wool growers in Michigan, from the *Prairie Farmer*.

Mr. C. E. Stewart being called upon, stated that he had lost quite a number of sheep for two years past, mostly ram lambs. Last year paid but little attention to it; this spring had paid much attention to examining the cases, and practicing upon them. Last year his sheep commenced dying after they had been on grass about four weeks. Thought at the time the trouble was with their kidneys. The symptoms observed, were falling out of the flock, stopping by a fence in a drooping weak condition; would revive and then be worse. They were inclined to drink heartily just before death took place. Examinations showed the vital organs healthy; but found in the small intestines innumerable small worms, resembling hair in plastering mortar. Found linseed oil and turpentine in doses of two ounces recommended for worms; gave it to four sheep, and

they died in twenty minutes; reduced the dose one-half, and gave it to more of the flock —no more died.

This year the same symptoms appeared, before I turned them out; got the preparation again, gave it to one, it died in five minutes; found very few worms, but the liver was seriously affected; very rotten and brittle; little blood in the animal, and that of poor quality. Consulted family physician, and concluded the trouble was what is known in England as the "rot," but did not in all respects answer the description; gave tonics, also whiskey, gentian, &c; they had no effect except for a short time. Found salt recommended, tried it vigorously—a tablespoonful at a dose—have now lost none since commencing to give it. Have noticed the following symptoms: Ears and nose cold, eyes and skin pale white, like a dead animal's skin. Wool does not seem to be affected, as it is bright and oily when removed from a dead sheep. Would caution every body against the turpentine and oil remedy.

Mr. Martin had noticed the attacks in his flock among the yearlings; tried to keep them up, by high feeding, but they commenced dying April 1st, lost all the two-year-olds. Found a swelling under the lower jaw, a spongy, watery mass, that when lanced discharged a clear liquid, freely. On examining sheep that died, found this watery substance extending over the whole body, between the skin and flesh; examined brain, found nothing unnatural.

Mr. Thompson of Ohio was one of the unfortunates; had lost valuable sheep, found the presence of grubs in the head, thought that was the trouble. By the advice of a neighbor, tried tobacco juice and turpentine, (injected into the nose a tablespoonful each,) on the balance of flock; lost no more.

PRUNING DWARF PEARS.

This subject was pretty freely discussed by the horticulturists of Cleveland, Ohio, at a late meeting.

Mr. Marshall said that some kinds of pears needed more pruning than others, but generally the neglect of pruning would soon result in the death of the tree, as the tree, if left to grow without check, would kill itself.

Mr. Elliot said that the public generally wanted tall, straight trees, and in conformity to this, the nurserymen had got to trimming up the stems, leaving a few lateral branches so as to form a little top. And again, they grow them so thick in the rows that they had but little chance to form that bushy head which was desirable. However, taking the tree as it came from the nursery, getting thrifty one-year-old trees, if possible, he would cut back severely—that is, cut back all the laterals to one or two buds, and cut the top down enough to make the dormant buds in the stem near the ground, start; this would leave nearly a naked stem about two feet high. The first year, he would do no more to it; the second spring he would cut back the last year's growth to two or three buds, leaving the tree in a round, bushy shape, getting the head as low and near the ground as possible. This process of spring pruning was to be continued until the head was formed, with perhaps some exceptions, to wit, as one of them, if a tree grow very strong, as was sometimes the case, throwing up shoots four, six or seven feet long, he would leave them until about the 20th of July, and then cut away about two-thirds of the previous year's growth. The reason for this is, that if cut in the spring, the vigor of the tree would cause a new growth of strong, thrifty shoots; while, if left until the 20th July, the growth would be checked, and the formation of fruit spurs induced. For the same reason, he would do much of his pruning by pinching in the ends of the limbs.

From Once a Week.

JULY.

BY JULIA GODDARD.

Throughout the house a dreamy stillness stole,
The watch-dog slept, scarce buzzed the lazy fly;
The clock ticked on with solemn measured tone,
Counting the drowsy moments of July.

Through quaint-shaped panes the mellow light crept in,
And traced rare brown-gold shadows on the floor;
The air was heavy with the scent that hung
Around the clematis that framed the door.

Through the clipped arches of the olden yew
I passed, and very silence reigned around;
As though the earth by some enchanter's spell
In magic sleep were bound.

The peaches slumbered on the garden wall,
The dew upon their crimson cheeks was wet;
The red-ripe strawberries gleamed amid their leaves
Like rubies in a ducal coronet.

The feathery wheat stood still as fairy spears,
Borne by a million transfixed sentinels;
The harebell was asleep, nor woke to ring,
In honor of July, her tiny bells.

The flame-tongued nightshade drooped her purple pride,
Yet held entranced the hedges where she clung;
And wearied there her trails of blossoms white
The wild convolvolvus flung.

The river with its waveless waters lay
All motionless as a pure crystal sea;
Another landscape painted on its tide,
With spire, and sail, and tree.

Close by the rush grown bank a boat was moored,
So still, it stirred not on the river's breast;
The world was hushed, and Nature at my feet
Lay wrapped in perfect rest.

Like to the princess in the story old,
She in her beauty slept,—oh, sight of bliss!
Waiting until some poet heart should come
And wake her with his kiss.

O wake! O wake! and breathe into my soul
Thy soul, that rightly I of thee may sing;
Or—sleep for ever, in thy beauty veiled,
'Neath July's wing.

—Prof. Nyce admits that neither strawberries nor peaches can be preserved in his fruit houses. Catawaba grapes have been kept till the next crop.

Ladies' Department.

DOMESTIC ECONOMY;

OR

HOW TO MAKE HOME PLEASANT.

BY ANNE G. HALE.

[Entered according to Act of Congress, in the year 1866, by R. P. Eaton & Co., in the Clerk's Office of the District Court for the District of Massachusetts.]

CHAPTER V.

HOUSE PLANTS AND THEIR CULTURE.

VIOLET.—The name of this pretty little flower is of Latin derivation, and refers to the ordinary home of the plant, by the wayside, whence it is frequently gathered in the country. It is found in all countries of the temperates zones, and on the mountains of the tropics. It has always been admired for its simple beauty and its fragrance. A wine was made from the blossoms by the ancient Romans; and sherbet, the favorite beverage of the Turks, is composed of a syrup of violets mingled with water, and is said to be very delicious. A Mohammedan tradition declares that "the excellence of the violet is as the excellence of El Islam above all other religions." The flower grows in great beauty on the islands of the Mediterranean; and Pæstum of the old time boasted of its violets, which, according to Rogers, the English poet, were as proverbial as their roses.

The violet is one of our commonest, as well as prettiest, wild flowers,—more than twenty different species have been recognized in the flora of North America. It is perhaps better known, and more universally admired, than any other native production; and our poets have not been backward in singing its praises. Alice Carey, in recounting "The verdurous season's cloud of witnesses," includes "The buds that ease hearts lovelorn;" and compares the setting sun amid clouds to

"Yellow violets springing bright
From furrows newly turned."

Mrs. Sigourney speaks of

"The healthful odor
Of the bright eyed violets;"

and of

"The bowed violet, that through chilling scenes
Turns to the sun that cheered it."

Street says—

"The violet, nestling low,
Casts back the white lid of its urn,
Its purple streaks to show.

Bryant calls it, as do many of the English, to distinguish it from the heart's-ease, "the May violet." He also terms it "That delicate forest flower with scented breath, and look so like a smile." And Whittier sings of "The violet sprinkled sod," and of "The amber violet's leaves." But, by far the most beautiful tribute has been paid to the flower in the verses of J. Russell Lowell, from which I cannot forbear making the following extract:

Violet! sweet violet!
Thine eyes are full of tears.
Are they wet
Even yet,
With the thought of other years?
Or with gladness are they full,
For the night so beautiful,
And longing for those far-off spheres?

Thy little heart, that hath with love
Grown colored like the sky above,—
On which thou lookest ever,—
Can it know
All the woe
Of hope for what returneth never?
All the sorrow and the longing
To these hearts of ours belonging?

Out on it! no foolish pining
For the sky,
Dims thine eye,
Or for the stars so dimly shining.
Violet, dear violet,
Thy blue eyes are only wet
With joy and love of Him who sent thee,
Which make thee all that nature meant thee."

Any of our violets—white, blue, or yellow—repay transplanting to the garden, or cultivation in the house, if set in soil of loam and leaf-mould, and kept cool and shady, except when near blooming. But the dark, purple English violet, which has been frequently made to bear double flowers, is most generally seen among parlor plants; or the Neapolitan violet, whose flowers are larger and exceedingly fragrant, though of a light color. These foreign flowers are raised from division of the root, or cuttings taken in June, and covered with a tumbler, and afterward set in a soil of sand, loam, and decayed leaves or other vegetable mould. The pots should be well drained with sherds. They need water often, usually twice a day; but very little at a time; if the water is allowed to remain about their roots they will die. Our native violets should be kept damp, always, also, but not wet.

WALL-FLOWER, called also *gilliflower*, a corruption of July flower, because the plant is generally ready to bloom in that month when cultivated out-of-doors. It grows wild on the old ivied walls of ruined castles, and on the chalky cliffs by the sea-coast, in England,—hence it is called wall-flower, and cliff-flower. In ancient times the English ladies, or dames, as they were then styled, took such pleasure in cultivating this plant and in wearing its blossoms as decorations, that the title of dame's violet was given it. It was regarded by the troubadours as an emblem of faithfulness in its habit of clinging amid ruin and desolation to the spot that first tenderly cherished it, and it is often mentioned in their madrigals and ballads. It also grows wild in Arabia, and is greatly admired there.

The blossom of the wall-flower is cruciform—shaped like the Maltese cross—having only four petals in its natural state. By cultivation the stamens have been changed to petals—thus making it double; as is often the case in plants—the violet, for example. But from being raised in unsuitable soil, or by neglect, they are apt to return to their original habit of bearing single flowers. The wall-flower, when raised from seed, seldom blooms till the second year in the garden; but plants can be potted in September, and, with proper care, will bloom in the house as winter flowers, and then be transplanted to the garden in May, when cuttings should be taken to form other plants for the next winter. These cuttings will be obtained by pruning the parent plant, which it will then need; and care must be taken that both the old plants and the new cuttings are set in very rich, light soil, or they will become single. A bed of rich loam and decayed vegetable matter, or leaf-mould, with the addition of sand—to make it light—will be the most suitable arrangement for them till the fall. Then take what you wish for the winter, and fill pots one-quarter full with cinders, and upon this an inch of compost made like that which formed the bed, and remove to this the plants, with a ball of soil about their roots. Fill in the compost lightly, and press it gently with the potting-stick, to make it firm. Water them often, but little at a time, and keep them in the shade a week or ten days; then let them have the sunshine. In October bring them to the parlor, and give them liquid manure, as you do pansies, and verbenas, and petunias. Those bearing dark-colored flowers are the most hardy, as also the most fragrant; and are more fragrant at night than through the day. With proper care a wall-flower will live several years and bear an abundance of beautiful flowers. Stocks, sometimes called stock gilliflowers, are often confounded with the wall-flower, which they resemble in some respects; but they belong to a different genus, and are only annual plants,—very seldom living beyond their first summer.

We have now gone through our list. It was not intended to include all plants that are cultivated in the house, but I trust that the selection presents sufficient variety, both of form and color, to suit the most fastidious. If any of my readers have parlor plants which have not been mentioned here, I hope they will try to acquaint themselves with the propensities and habits of each one, individually; and, by comparing these observations with the descriptions and directions furnished above, be enabled to give every plant its proper nourishment and care.

When you have decided what plants to cultivate, and have arranged them so that they may receive light, air, heat, and water to the best advantage, don't forget that regularity in supplying these requisites is of the utmost importance. Set apart a particular portion of each day to attend to them, and let that time be as early as possible after your morning duties to your family have been performed. Once a week a double portion of time will be needed, to give both pots and plants a thorough cleansing; and that is all that they will require besides these few minutes in the morning of every day;—unless you have among your number those whose full-blown flowers need a change of position before the sun reaches its noonday height, or others that must have a second watering just before it sets.

In the cultivation of plants you wish not only to gratify your own taste, but to encourage in your children a love of beauty and order, and to furnish them with subjects for profitable conversation and high and holy thought. So you will endeavor to gather from every source, personal observation, intercourse with friends, and reading of books and papers relating to the matter, all information that can add interest to your plants or to their culture. Let the boys and girls, themselves, when they are old enough, help you in caring for the flowers. As an especial favor, allow them to claim ownership of one or more plants; it is such a proud day for a child when he, or she, can say of anything living or growing, "It is my very own—to use as I please," that I wonder parents do not earlier and more frequently grant them this harmless indulgence. They are always glad of the means thus furnished them for being generous and benevolent; and find much happiness in bestowing a pretty flower on a poor child who has looked with covetous eyes upon the tempting display in the window; and in preparing little surprises of floral gifts for father and mother, or other members of the family, on birthdays and other festivals. With what delight, too, they make tiny bouquets, or gather a few geranium leaves for a beloved teacher, or a sick friend. And, then, if death comes, and their bright faces are shadowed by solemn thoughts, how many beautiful lessons of love and hope and trusting faith the flowers can teach them, as their trembling fingers weave them into emblems of sorrowing affection. And as they lay these gifts upon the last resting-place of loved ones, will they not be reminded of the great mystery of the resurrection; and calling to mind the insignificant seed from which so much loveliness has arisen, can they not more clearly comprehend the meaning of the blessed words, "God giveth it a body as it hath pleased Him. It is sown in corruption, it is raised in incorruption; it is sown in weakness, it is raised in strength; it is sown a natural body, it is raised a spiritual body. For this corruptible must put on incorruption, and this mortal must put on immortality."

If the children thus share in owning your plants, they will be quick to render assistance in promoting their welfare,—and this will not be slight, nor of small importance. A girl of seven years old can take as good care in watering plants, and in clearing them of insects, as a grown person, and

this is the usual daily work. And a boy, as soon as he can use a jack-knife, will find that he also can render important service. First, he can make straight, smooth rods—which may be stained some dark color—to which his mother will want to tie her geranium branches, or petunias, or fuchsias. When he has made himself perfect in these he can try his hand at making trellises, or frames, for calceolarias or heliotropes. If he cannot smoothly cut a square, straight strip of wood, almost any house-carpenter will give him such, which he has thrown aside with his refuse trimmings. It should be about an inch wide, and from two to three feet long, according to the height the plant is expected to attain. Bore in this a row of holes about an inch and a half apart. Then get a long, slim cane of rattan,—such as was once used in making bonnets,—or a wire, and draw it through the holes so as to have loops of the cane or wire on each side of the wood. Whittle the end of the wood to a point, that it may enter the soil easily; and then stain the frame and it is finished. An older boy will be proud to make his mother a flower-stand. Of these she will need two, if not more; one like that mentioned in Chapter II, and another, on which to place a camellia, a calla lily, or a rosebush when in bloom. For this last, which is intended to accommodate but one flower-pot, a very pretty plan is the following:—Saw from a round log of wood two smooth slices, about one inch thick,—they should also be one foot in diameter. Then from a slender pole—an inch and a half or two inches in diameter—a piece about twenty-seven inches long. These materials should be of the heaviest wood you can get. Nail the centre of each circular piece to an end of the piece sawed from the pole. Get, then, smooth hoops from a flower barrel. Unclasp one and cut an end squarely and nail it with small nails to the edge of one circular so that the hoop shall curve inward, and be nailed to the centre of the pole, and then curve outward; having cut it just long enough to reach the other circular, to which that last end must be nailed. Six strips, at equal distances, should thus be nailed to the round top and bottom; and thus be curved in and nailed to the centre of the supporting pole. There should then be a strip of the hoop nailed around the top and bottom, to cover the ends of those strips, and the form of the stand is made.

It should be stained to look like black walnut. For this, get red ochre and lamp-black, and mix them with water—to which a little glue may be added. Cover the stand thinly with this staining. You can add to its beauty by laying along the edge of the circulars, and upon the curving strips, imitations of carved work. For this make putty of whiting and oil, with which lamp-black and red-ochre must be mixed, to give it the dark brown color of the staining used. Work the putty thoroughly, and let it be quite stiff. Now your sisters can help you; in fact, will want to do all the rest till the stand is finished, for the putty must be rolled out thin, like pie-crust, and cut into shapes. Your mother will let you take a few ivy or geranium leaves for patterns. These must be laid upon the sheet of putty, and gently pressed upon it, so that the veins and indented edge of the leaf is plainly imprinted. Then, with a sharp knife, cut out this impression, and you will have a perfect copy of the leaf. Cut a number of them, and then roll bits of putty, for stems, in long slender rolls; and place these upon the stand to represent the branches and stems of vines creeping around it and up the strips of the centre; make a few coils of the smallest rolls, to imitate tendrils, and intersperse them with the stems. Then bend and curve the leaves to look natural, and lay them along the vine, occasionally putting among them clusters of small balls of putty, in imitation of berries. The sheet of putty from which the leaves are cut should be twice as thick as if rolled for pastry; and when rolling it, in order to keep it from clinging to the hands, or to the roller, a little of the dry materials of which the putty is made should be sprinkled upon it. When you have finished, set the stand in a cool, dry place till the work is hardened.

A shelf for the corner of a room, on which to set a large plant, or a pot of ivy when you wish to trail its branches over the walls, can be made from a three-cornered piece of board; having a border of this imitation of carving arranged on the edge of its longest side, and fastened up by screwing the other two sides to cleats, which are themselves screwed to the two walls. The small bracket-shelves, that are cut in open figures of scroll and leaf-work, from cigar-boxes and other thin wood, answer very well for small light pots, and have a very pretty effect when used for that purpose.

And here is another design for a stand to hold a large pot. Take a piece of board fourteen inches square; upon this, nail another twelve inches square and on this one ten inches square. These nail to a stick of wood six inches in diameter and two feet long, for its pedestal. On the top of this wooden pillar nail a block—two inches thick—of octagon shape; or, two pieces of board, one upon the other, of the same form, and one foot in diameter. Then from each side of this head-piece should pass narrow strips—fence pickets are of the right size, to the upper layer that forms the foot-piece; these give the structure the appearance of an eight-sided column. You wish it to resemble stone, so you must get—some day after it has rained—the grey and greenish lichens from rocks and old fences; these are easily scraped off when they are damp. At the same time gather some red-cup, and white coral, and star moss; as well as the soft, green, velvet kinds; and a few alder cones, and acorns in their cups. These are to lie upon the base of column. Then make a paste of rye-meal and glue water. Boil it well, and when it is cool spread a coating of it upon the wood, and arrange your lichens according to your taste; and in the same way, the mosses and other little things.

If you can find any of the hanging, gray-beard moss on dead trees, or decaying branches, place a little of it here and there about the edge of the top of your column. A stand made in this way is quite pretty.

For holding most of your plants, the larger stand and tray, mentioned in a previous chapter, will suffice, and these, too, can be of domestic manufacture, by exercising a little ingenuity. If you have more than eight pots, the tray should be two and one half feet long and two feet wide. Around the sides of the tray the smaller pots should be placed; and a small wooden form, six or eight inches high and eighteen inches long, should occupy the vacant space in the centre, on which the larger pots are to be set. All these things can be done by the boys. They can also get the peat, or bog soil; and spread it for drying; and then the sand to mix with it after it becomes dry—for the bog-earth, or peat, always needs sand with it to make it light and fertile. And the leaf-mould they can make by gathering the leaves that fall from the trees, and any other decaying vegetable matter, and stirring them over occasionally; mixing with the heap a little lime, in the fall, and then in the spring stirring it again, and sifting out the most decayed to put with the other materials when the plants have new soil given them. And they, and the girls too, can make themselves very handy at that time; the old saying is—"Many hands make light work:" it ought to be "pleasant" work, for the most disagreeable occupation becomes delightful if those we love share it with us.

A few words more ought to be said about insects. If you find that, with all your care, they still trouble your plants, just give them a dose of *bitters*. Buy an ounce of quassia wood at the druggist's, and boil it in three pints of water till there remains but one quart of the liquid. Dip the tender shoots of your plants in this, after it has become cool, and wash the rest with a small mop made of a bit of sponge; and in a few minutes wash them over again with clear water,—it injures plants to allow this liquid to remain upon them. If this does not remove them, try tobacco in the same way—let them see that you are determined to fight it out on that line. I should like to tell you of a battle I had once with the Aphides, when, as the history-books say, "the enemy was repulsed with great slaughter," and all the "weapons and munitions of war" that I possessed, were an old squirt-gun and a bowl of tobacco tea. But I found that prevention was far better than cure; for my poor plants for the remainder of the winter looked as miserable as any refugees from Rebeldom; and I have been careful to keep a plenty of trusty spies and scouts on the track of the enemy ever since,—and believe that, in case of invasion, the guerrilla method of warfare is the surest and safest for flowers.

The treatment of plants that had been frozen was spoken of in a former chapter, but one important point was accidentally omitted. All plants that are frozen should not only have their pots placed in cold water, but the plants themselves should be sprinkled with the same, and kept from the sunshine until the leaves resume their natural appearance. Ferneries, that are now so fashionable, deserve a more extended notice than I have been able to give them—at some future time they shall receive attention. And the preparation and arrangement of several articles of floral decoration, ought properly to be considered under this head; but the length of this chapter has, I fear, already taxed the patience of my readers too much,—so these also must wait till a more convenient season.

NOTE.—Although the author has cultivated House Plants successfully during the past twelve years, she has not relied solely upon her own experience in the preparation of these papers, and she takes this opportunity gratefully to acknowledge her indebtedness to several sources for much valuable information upon important points.

HOUSEHOLD ECONOMY.

CONTRIBUTED FOR THE NEW ENGLAND FARMER.

MESSRS. EDITORS.—The two following receipts for making hard soap were given me some eight years ago, and as I have never seen them in your paper, I send them to you to use as you think best:—

Hard or Chemical Soap.

Six pounds of clean fat or tallow; six pounds sal soda; three pounds of lime and four gallons of water. Melt the fat, dissolve the lime and soda in boiling water, and let it remain over night to settle; then strain the water into the grease, not disturbing the sediments, and let boil until done or until thick; take it out to cool. When cold, cut in bars.

Poor Man's Hard Soap.

Put in an iron kettle five pounds unslacked lime; five pounds sal soda; three gallons soft water; let it soak over night; in the morning pour off the water; then add to the water three and a half pounds of grease; boil till thick; turn in a pan to cool and then cut in bars.

These receipts will make a large quantity of good hard soap, but not equal to that made with the Saponifier or concentrated lye. I have used that for making hard soap for six years, and should not know how to get along without it. Have tried all four of the receipts given for using it, but like the third one best for washing clothes, but it shrinks more in drying than others.

Washing Soap.

Two pounds bar soap, (made from the Saponifier); one ounce borax. Shave the soap fine. Put that and the borax in one quart of water and simmer until well mixed. One-fourth of a pound of this is sufficient to do a washing for six persons.

I have used this soap with the Union Washing Machine and Wringer, for several months, and can do a washing in one half the time with less

soap, less water and less wood, than any other way I ever tried, and think no one who has given them a thorough trial would part with them for twice their cost, if they could not get more like them. A FARMER'S WIFE.

Dudley, Mass., 1867.

Brown Bread.

A pint basin twice heaping full of corn meal, which is ground very coarse, scald with boiling water, using as little water as you can, with much stirring, get the meal all wet; when cool add a pint dish not quite even full of rye meal; one teacup of hop, or hop and potato yeast; one cup and a half of molasses. Mix very soft, with tepid water. Rise about two hours or till it cracks, then bake four or five hours, very slowly at the last. G.

Randolph, Vt., 1867.

Rice Pudding.

Four tablespoons of rice; one quart of sweet milk; boil until tender, and the milk is absorbed; then stir in the yolks of four eggs, well beaten, and three tablespoons of sugar, with the grated rind of one lemon. To the whites of the eggs, well beaten, add eight tablespoons of powdered sugar, with the juice of the lemon; lay it over the pudding and return to the oven until slightly browned; eat cold.

Queen of Puddings.

One pint of bread crumbs; one quart of milk; teacup of sugar; yolks of four eggs; a little salt; a small piece of butter. Lemon improves it. When baked, spread over this a layer of jelly, or any sweetmeat. Beat the whites to a froth; add a little white sugar; spread over the pudding, and return to the oven until slightly brown. To be eaten cold, with sweet cream.

White Cake.

One and one-half cups of sugar; three of flour; one-half cup of butter; one cup of milk; two teaspoons of cream tartar; one of soda; three eggs; beat the whites separate, sugar and yolks together.

Sponge Cake.

Seven eggs; beat the whites and yolks separate; one half pound of flour; three-fourths pounds of sugar; one tumbler of cold water; boil the sugar and water together until it boils clear; let it cool before putting it with the eggs. This is sufficient for two loaves.

Feather Cake.

One cup of sugar; one-half cup of sweet milk; two eggs; not quite half a cup of butter; one teaspoon of cream tartar; one half teaspoon of soda; two cups of flour; nutmeg; bake in shallow tins.

Soft Cookies.

Two cups thin cream; two cups of sugar; three eggs; caraway; flour, sufficient to make it as thick as pan-cakes; two even teaspoons of saleratus; drop with a spoon on buttered tins, and bake fifteen or twenty minutes.

Cookies.

One cup of butter, well mixed with two cups of sugar; three eggs; one cup of milk; one teaspoon of saleratus; salt and spice to your taste; flour enough to mould it. NELLIE.

Hardwick, Mass., Feb. 17, 1867.

REMARKS.—Several other correspondents have our thanks for favors which will soon find a place. ED.

For the New England Farmer.

RHUBARB.

The season has nearly come for the general use of this delicious article, and perhaps a few hints to young housekeepers, about its preparation may not come amiss.

Most people like rhubarb, and it is very extensively used; and still but few know how to prepare it properly.

Sauce.

Wipe the stalks very carefully with a damp cloth, and then with a dry one. Never peel it. It destroys the flavor to remove the peeling, and spoils the color. Cut into pieces about half or three-quarters of an inch long. Put into a porcelain lined kettle or a new, bright tin, not an *old black one*; add as much white sugar as your judgment dictates; cover with boiling water; put a plate tightly over the dish and cook until quite soft, never touching it, as stirring it mashes it all up. When done (if cooked in a porcelain-lined kettle); set in a cool place, undisturbed, till tea time, then slide it carefully into your glass dish, and you will have a nice looking sauce with a clear pink jelly-like syrup, making it look very different from the mass of little strings, usually called rhubarb sauce. If cooked in a new tin, it must be slid out into a bowl or pudding-dish as carefully as possible and not transferred to your glass dish until cold.

Pies.

Wipe as for sauce, line a deep plate with good crust, rolled very thin, and cut the rhubarb in as you sometimes do apples. Add one cup of white sugar to a pie; three tablespoons full of water, two of flour, sprinkled over the top; cover very tight —tucking in the edges to keep in the—juice and bake brown. Eat for tea or the next morning. Rhubarb pie over one day old is poor eating. White sugar is very much better to use with rhubarb than brown, as it makes a richer syrup and gives a very different flavor. By cutting your rhubarb and putting boiling water to it, and letting it cook about five minutes, and then pouring off the water and filling your pie with the rhubarb thus deprived of half its acidity you need use only a large half cup of sugar. Many prepare it so, but I think it makes the pie flat and takes away the good flavor.

Rhubarb Dumpling.

Wipe your rhubarb and cut as for sauce. Make up a soft dough as for cream tartar biscuit; one

quart of flour, one teaspoonful of soda two of cream tartar, a little salt; mix with water or milk, just which you have the most of, and into the dough stir the rhubarb as you would plums into cake; steam one hour and a half. Eat hot with sweet sance. A pint bowl full of cut rhubarb is enough for a quart of flour.

MRS. S. B. SAWYER.

For the New England Farmer.

DOING WITHOUT "HELP."

I have no need to inform you that writing for papers is not my forte, but there is one subject that is of importance to housekeepers, and it is with them I wish to have a little discourse, and I know of no more ready mode of communication than through the columns of our favorite paper, the NEW ENGLAND FARMER.

For the past quarter of a century there has existed a growing evil, until it has become one of the most annoying trials incident to housekeeping. I speak of *obtaining* and *retaining* good help. Since the custom has become so general of delegating to others the power and oft times the right of the kitchen, we have been subjected to much inconvenience in procuring *trusty, faithful* persons, who were reliable. If, peradventure, an acceptable one is found, it is at an exorbitant price for wages, so that with breakage, waste and losses, the expense is not much short of from seven to eight dollars each week. Now, sir, to obviate, as far as possible, this difficulty, and at the same time to preserve the placid tempers of our husbands, a few families are trying an experiment of running our own train (so to speak). Three families of us have dismissed our Katharines and Marys, and have rolled up our sleeves and we make things hum again,—and it is a wonder to ourselves how admirably we succeed. Our little fancied troubles recede as we approach them, and often do we break out in a hearty laugh at our success. And then, too, our health is much improved, and although at times a little fatigued, yet the necessary exercise has repainted our sallow cheeks (so they say), and *ennui* is banished from our midst. And more than all, the approving smile of our husbands well pays us, for *trying to do without help.* We have made arrangements with a faithful person to come occasionally to wash, iron and clean house, but aside from that we attend to the wants of our families. It is now over a twelve-month and I pronounce it a success. We feel competent to judge, as the four seasons have passed with their sequent labors, and the abatement of the tax on our nerves and purse renders it an experiment worthy the trial.

I venture to say, if any of our lady friends could be induced to *do their own work* six months, they would hardly be persuaded to have so annoying and expensive an appendage in the house as what is *called* help.

FANNIE.

Elmwood District, Middlesex Co., Mass.

P. S. It was not my intention to have added a postscript to this note, but woman-like I have a *last word*, which is that much depends on the co-operation of the family to have the experiment succeed. If any other of your readers have made the trial I wish they would relate their experience for the benefit and encouragement of others. F.

REMARKS.—Bravo! Our fair correspondent is entitled to a hearing, for she practices what she preaches. She has found the secret of *independence* in her household matters, and so long as health is spared her and her household cares are not multiplied beyond a reasonable extent, need have no reason to repent her "strike" against incompetency and wastefulness on the part of her "help." Of course there is a limit to her ability, and of course there is something to be said in favor of "help," but, as the majority of families, and especially those who reside in the country, are situated, Fannie's course is praiseworthy, and has our cordial commendation. Be it understood, however, that we consider no husband deserving of such a wife, (or of any wife at all,) who will not do his full share of the multiplicity of *chores* and errands willingly and seasonably. This, alone, will lighten housework of nearly one-half its cares, and leave the wife time for attention to something besides the routine of the kitchen and chamber, and give her opportunity for recreation, without which body and mind will suffer. ED.